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President's Report

FOR THE YEAR ENDING
30TH JUNE, 1941

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President's Report

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UNIVERSITY OF TORONTO

President's Report

FOR THE YEAR ENDING
30TH JUNE, 1941

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REPORT OF THE PRESIDENT

To the Governors of the University of Toronto:

GENTLEMEN:

I have the honour to present my tenth annual report on the academic work of the University and University College for the year ending on the 30th of June, 1941:

INTRODUCTION

Following the advice of the military authorities we maintained our general programme of teaching and research. Those in the Faculties of Medicine, Dentistry, and Engineering we advised to finish their courses, with a view to better preparation for national service. All male students over the age of eighteen took military training. In all the relevant departments, special efforts have been made to teach the fundamental issues at stake in the present struggle and to emphasize those spiritual values which make democracy possible and desirable and make human life livable. All student activities of a social and recreational character have been simplified and made as inexpensive as possible. Nothing can be "as usual" if there is to be a "total effort" to win a decisive victory in this "total war" against our humane and Christian civilization. Every man and woman, young or old, has a responsibility to make his or her special contribution to the crushing of the "evil things" against which we fight and to the reconstruction of a world of peace, justice, and brotherhood.

ATTENDANCE

The total number of students enrolled was 7,725, of whom 4,774 were men (last year 5,048) and 2,951 women (last year 2,763); 6,825 being registered in the colleges and faculties, and 900 in the departments. The number of students proceeding to degrees was 6,051 and to diplomas 908. Of the students in attendance 3,804 came from Toronto, and 3,036 from other parts of the Province of Ontario. Every county except Manitoulin is represented and every province in Canada. There has been a decrease in registration of 86. Men students have decreased by 274 and women students have increased by 188. This is what we should expect. More and more men will enter the Active Service Forces, in the Navy, the Army, and the Air Force. The Navy and the Air Force seem to have most attraction. I anticipate a further decrease of men as the war continues; but that may not be so great next year as was at first expected, because the government has given a general direction that men should finish their courses before enlisting, and a particular direction that those in courses related to the war effort—such as Medicine, Engineering, and Dentistry—should complete their academic training without interruption. To all students who do interrupt their courses, the government is promising generous aid to enable them on their return to resume their studies. This is most welcome news.

THE STAFF

In the University and University College the total staff numbered 963, of whom 133 were professors, 81 associate professors, 105 assistant professors. The teaching staff in the federated colleges numbered 86. The grand total in the whole University is thus 1,049.

The University and indeed the whole world suffered an irreparable loss in the tragic, yet triumphant death of *Major Sir Frederick Grant Banting*, K.B.E., M.C., M.D., LL.D., F.R.S., F.R.C.S. (Eng.), F.R.C.P., F.R.C.S. (Canada), F.R.S.C., Professor and Director of the Banting-Best Department of Medical Research. He was flying to England that he might co-relate his results in aviation medicine with those obtained by research workers in England; the plane crashed on the coast of Newfoundland on February 21 and he died shortly after the crash. His epoch-making discovery of insulin brought fame to himself, his fellow-workers and this University, and relief, hope, and continued life to countless thousands of human beings. He goes down in history as one of the great benefactors of mankind; his name will become a legend in Canada and a challenge to Canadian youth. He had the genius of research and really founded in this University a school of medical research. He stimulated many investigations, notably in regard to silicosis; and since the war began he threw himself and all his equipment into promoting the solution of problems of aviation medicine. No man was more unspoiled by success; he remained the simple, modest, kindly, unselfish man he always was. No man was more helpful and encouraging to young men who had ideas and enthusiasm. He believed profoundly in the efficacy of hard work. He leaves a great name and a great inspiration. He is succeeded in the Directorship of the Department of Medical Research by his chief helper in the early stages of his investigations concerning diabetes, Dr. Charles Herbert Best, himself a leader in physiological research.

The following retired members of our staff have died during the year:

On September 1, 1940, *Dr. W. Lash Miller*, who retired from the headship of the Department of Chemistry in 1937. He was on the staff for forty-eight years and became Head of his Department in 1921. He was a famous physical chemist and an international authority on chemical thermodynamics. He was made a C.B.E. and was President of the Royal Society of Canada in 1935. He was a forceful personality and a stimulating teacher. He left to the University for his old department his large and valuable chemical library.

On November 28, 1940, died *Mr. A. J. Glazebrook*, who lectured on Foreign Exchange. His long experience in financial life enabled him to speak with interest and authority on this subject.

On January 22, 1941, passed away after a long illness, *Dr. Kennedy C. McIlwraith*, for many years on our staff in Obstetrics and Gynaecology.

On May 16, 1941, *Professor A. T. Laing* died. He had long been a Professor in the Department of Civil Engineering: Municipal and Structural.

We offer our sincere sympathy to Victoria University on the death of *Chancellor E. W. Wallace*, who after a long illness passed away on June 20, 1941. He heartily co-operated in all the common activities of the University, and exerted the wholesome influence of a truly Christian gentleman throughout our whole academic body.

We also record our deep appreciation of the striking service rendered to the whole nursing profession by *Miss Jean Gunn*, the Superintendent of Nurses in the Toronto General Hospital, with which, as the teaching hospital of the Medical Faculty of this University, we have such intimate association. After much suffering, courageously borne, she died on June 28, 1941.

The following members of the staff retired as of June 30, 1941:

Dr. G. M. Biggs, who in 1914 began his career as teacher in the Department of Oto-Laryngology in the Medical Faculty and became Associate Professor in 1935 and Professor and Head of the Department in 1939. Unhappily ill-health compelled his retirement in June, 1941, and on August 23 he passed away. He was skilled in his profession, and highly esteemed by his colleagues and his patients. He has been succeeded by his senior colleague, Dr. Angus A. Campbell.

Miss I. G. Coventry, who has been connected with the Physical Education of the women students since 1912, and has done faithful and constructive work.

Dean C. D. Howe, after thirty-three years of service on the staff of the Faculty of Forestry, retired at the end of July, 1941. He has been Professor of Forestry and Dean of the Faculty since 1920. He has made numerous reports on forest conditions in Canada and has had much influence on public policy in regard to forest conservation and scientific reforestation. He has been succeeded as Dean by one whom he himself recommended, Associate Professor G. G. Cosens—a man who has wide connections with forest industries and great practical experience. It was during Dean Howe's tenure of office that the simple yet dignified Forestry Building was erected on St. George Street.

W. T. Jackman, Professor in the general Department of Economics. He became Professor of Rural Economics in 1926 and of Transportation in 1931. He has been a member of commissions in Ontario and Manitoba on the subject of rural credits and his reports on this subject have been helpful and authoritative. His books on transportation have been accepted as standard authorities in Britain, Canada, and the United States. His last volume, *Economic Principles of Transportation*, was published in 1935. He held strong views on the subject of railway amalgamation in Canada and on the problem of the St. Lawrence Waterway.

Dr. W. H. Lowry, who began his connection with Ophthalmology in 1912, became Assistant Professor in 1922, and Professor and Head of the Department in 1929. He carried the burden of the headship at our request for an extra year, and now retires to the less strenuous life of private practice amid the universal good wishes of his colleagues and students. He is succeeded by Dr. Walter Wright of the Sick Children's Hospital staff.

C. H. Mitchell, who was Dean of the Faculty of Applied Science and Engineering since 1919, retired in 1941 because of ill health. Amid universal regret he passed away on August 26. His work in the University seemed to synchronize with his active life; both ended together. He was a pioneer in hydro-electric engineering; he had a distinguished career in the Great War as a trusted intelligence officer, earning the rank of Brigadier-General and many decorations; he served on various commissions which dealt with radial transportation and the St. Lawrence Waterway; he was twice elected President of the Toronto Board of Trade. He received from his fellow-engineers the coveted distinction of the presidency of the Engineering Institute of Canada. He leaves behind him a memory of kindliness, sympathy, and friendliness. He is succeeded in the deanship by one of his most trusted colleagues, Professor C. R. Young, for years the Professor of Civil Engineering: Municipal and Structural, under whom the fine traditions of "The School" will be worthily maintained and enriched.

At the end of November, 1940, the President's Secretary, *Miss Annie W. Patterson*, retired after forty years of highly efficient service in the University. She was secretary to Presidents Loudon and Falconer as well as to the present incumbent of the office. She has been succeeded by Miss Agnes MacGillivray, formerly in the Registrar's Office.

Dr. G. D. Porter, who since 1924 has been the Director of the Health Service for men in the University. Under him this service has been organized and developed to its present proportions. A still more extensive service is contemplated for the future.

G. O. Smith has been Lecturer since 1907 and Professor of Latin in University College since 1928. He was a fine and accurate scholar. For years the Latin particulars in the diplomas for honorary degrees came from his pen. Ill health compelled his retirement.

R. B. Thomson, Head of the Department of Botany and Professor of Plant Morphology since 1924. He joined the Department in 1899. During his term of office and through his energy, the new Botanical Building was erected and equipped, the work greatly extended and intensified, and research actively fostered. One of his special aims has been to secure the establishment of a Botanical Garden adjoining the city of Toronto, somewhere in the Don Valley. He has been succeeded in the direction of the Department by Professor H. S. Jackson.

The following resigned their positions:

E. K. Brown, who has been on our staff since 1929 (with the exception of two years spent in the University of Manitoba as Head of the Department of English) as Lecturer, Associate Professor, and full Professor (since 1938) in the English Department of University College. He has resigned from June 30, 1941, to become head of the Department of English in Cornell University. He was a brilliant lecturer and a productive scholar.

L. A. Mackay, who was an Ontario Rhodes Scholar and has since 1928 been on our staff in Latin in University College as Lecturer and Assistant Professor. He has gone to be an Associate Professor of Classics in the University of British Columbia.

N. A. M. MacKenzie, who came to us from the Labour Office of the League of Nations in Geneva to be an Associate Professor in Law in 1926. Since 1933 he has been Professor of Public and Private International Law; and has taken part in the various conferences on Pacific Relations held in Canada, Australia, Japan, and the United States. He left us in September, 1940, to become President of the University of New Brunswick. Our best wishes follow him.

Philleo Nash, who has been Lecturer in Anthropology and Assistant Keeper of the Ethnological Collection in the Royal Ontario Museum of Archaeology. He carried out a notable programme of excavation of an Indian village site near the town of Aylmer. He has resigned to take charge of a family estate.

Miss J. I. Simpson, who has been Lecturer and Assistant Professor of Household Science for the past two years.

We appreciate the compliment paid to our excellent staff when members are appointed to important positions in other institutions. We cannot but miss their services, but we know that links of fellowship are thereby forged between the various universities concerned.

Leave of absence was granted to the following:

Professors Bott (of Psychology) and *Franks* (of Medical Research) have spent some time in England in connection with war problems which arise in their respective departments.

Dr. Richard Brauer of the Department of Mathematics was honoured by the invitation to be Visiting Professor of Mathematics in the University of Wisconsin. He is one of the most famous authorities in the field of higher algebra. For the coming year he has been awarded a Guggenheim fellowship, and will be able to devote his whole time to investigation with a view to publication. We look for his return at the beginning of the academic year 1942-3.

Miss H. L. Bryans, Lecturer in Physical Education in the Ontario College of Education, spent the year in further investigation of methods of physical education on this continent.

D. G. Creighton, Associate Professor of History, won a Guggenheim fellowship and devoted the year to the study of Canadian-American relations, reading in various specialized libraries in the United States.

W. J. K. Harkness, Associate Professor of Limnobiology in the Department of Zoology, spent the year in the University of Florida, studying forms of animal life in the local habitat.

Leave of absence for the duration of the war was granted to the following:

Faculty of Arts: D. S. Ainslie, Associate Professor of Physics; D. C. Baillie, Lecturer in Mathematics; J. F. Heard, Lecturer in Astronomy; P. M. Millman, Lecturer in Astronomy.

Faculty of Medicine: J. K. W. Ferguson, Assistant Professor of Pharmacy and Pharmacology; G. E. Hall, Professor of Medical Research; J. W. Ross, Associate in Surgery.

Faculty of Applied Science and Engineering: L. S. Lauchland, Lecturer in Electrical Engineering; T. R. Loudon, Professor of Civil Engineering: Municipal and Structural; W. C. Macdonald, Lecturer in Chemical Engineering; W. L. Sagar, Assistant Professor of Civil Engineering: Municipal and Structural.

Part-time leave of absence for the duration of the war was granted to the following:

Faculty of Arts: G. P. Cosgrave, Assistant Professor of Psychology; J. O. Wilhelm, Assistant Professor of Physics.

Faculty of Applied Science and Engineering: H. H. Madill, Professor in the School of Architecture.

The following promotions were made:

Faculty of Arts

Professors—V. W. Bladen, Political Economy; A. Brady, Political Economy; A. F. Coventry, Zoology; R. M. Dawson, Political Economy. *Associate Professors*—C. Barnes, Physics; M. F. Crawford, Physics. *Assistant Professors*—A. A. Brant, Physics; T. A. Goudge, Philosophy; G. Tatham, Geography; F. E. W. Wetmore, Chemistry.

Faculty of Medicine

Associate Professor—E. T. Waters, Physiology. *Assistant Professors*—A. W. Canfield, Paediatrics; R. I. Harris, Surgery; E. A. Morgan, Paediatrics; C. G. Smith, Anatomy; F. F. Tisdall, Paediatrics; F. O. Wishart, Hygiene and Preventive Medicine; H. W. Wookey, Surgery.

Faculty of Applied Science and Engineering

Professors—W. J. Smither, Engineering Drawing; W. J. T. Wright, Engineering Drawing; A. R. Zimmer, Electrical Engineering. *Assistant Professors*—D. N. Cass-Beggs, Electrical Engineering; M. J. C. Lazier, Civil Engineering: Municipal and Structural; R. C. Wiren, Mechanical Engineering.

Faculty of Household Science

Assistant Professor—Miss J. I. Simpson, Household Science.

School of Hygiene

Associate Professor—J. Craigie, Epidemiology.

The following new appointments were made:

Faculty of Arts

Lecturers—J. E. L. Graham, Political Economy; W. W. Moorehouse, Geology; S. B. Stocking, Political Economy.

Faculty of Medicine

Lecturers—E. L. Davey, Hygiene and Preventive Medicine; D. L. Selby, Pathological Chemistry.

Faculty of Applied Science and Engineering

Lecturers—L. S. Lauchland, Electrical Engineering; D. D. Panabaker, Mechanical Engineering.

Ontario College of Education

Assistant Professor—A. Macdonald, Elementary Subjects.

The following honours were conferred upon members of the staff:

PROFESSOR D. S. AINSLEY, elected Vice-President, The Royal Astronomical Society of Canada; PROFESSOR R. W. ANGUS, elected an honorary member, The

American Society of Mechanical Engineers; **Professor R. Brauer**, awarded a Guggenheim Fellowship; **Professor Jessie Brodie**, elected President, The Canadian Home Economics Association; **Professor F. S. Hogg**, elected President, The Royal Astronomical Society of Canada; **Professor J. T. Meek**, elected Vice-President and Member of the Executive Committee, The American Oriental Society, and appointed a Member of the Committee on Research, The Society of Biblical Literature and Exegesis; **Professor Griffith Taylor**, elected President, The Association of American Geographers.

Honours conferred upon members of the staff of the Faculty of Medicine are contained in the Dean's report.

THE UNIVERSITY IN GENERAL

The detailed reports which are appended give some idea of the variety and extent of the academic work of the University. I here draw attention only to the outstanding features of our activities and add some supplementary information.

A spirit of earnestness and seriousness has pervaded the whole institution. There must be few, if any, who do not now realize that this war is a struggle for life or death, for the survival of those spiritual values which alone make national and individual life worth living, and for the establishment of international decency, and good relations on a firm foundation.

I record with deep sorrow the death of one of our most devoted Governors, Dr. T. A. Russell. A graduate of this University, he went into business, industry, and finance and prospered there exceedingly; but he never forgot his Alma Mater nor the obligations of public service. For years he was Chairman of the Finance Committee and Vice-Chairman of the Board of Governors. It was fitting that his funeral service was held in Convocation Hall.

We also record with regret the death of the Minister of Education, Dr. L. J. Simpson, in August, 1940. He was deeply interested in the welfare of the University (of which he was an honoured graduate) and he had a sympathetic understanding of our problems. His successor, the former Deputy Minister, Dr. Duncan McArthur, has unfortunately been laid aside through illness for many months; we trust that he will soon be restored to health and vigour.

Mr. Charles Burns, a member of the Board of Governors, has enlisted in the Air Force and has gone across the ocean for active service. He was a most active and helpful member, attending every meeting and making himself familiar with the details of the somewhat complicated work of this large and growing institution.

The three general university residences were placed under the supervision of Dr. M. W. Wilson of the Medical Faculty. He installed capable residents in each house. The organization and good order of the residences were improved by his work. The government has now taken over these Houses to accommodate the hundreds of Air Force men who are being trained as radio technicians. In consequence all our own regular students will have to find lodging elsewhere.

We had the honour of visits from His Excellency the Governor-General with H.R.H. Princess Alice and from Crown Prince Olaf of Norway.

For the first time in our history a member of the University staff has been elected Mayor of Toronto. Dr. F. J. Conboy is on the Faculty of Dentistry. In his honour I gave a dinner in the Great Hall of Hart House for the Controllers and Aldermen of the city. A goodly number of the present City Council are graduates of this University. Also, one of our graduates has been appointed Lieutenant-Governor of a province. The Hon. R. F. and Mrs. McWilliams of Government House, Winnipeg, are both graduates of Toronto.

Dr. F. P. Keppel for many years the President of the Carnegie Corporation of New York now retires from office. To him this University is deeply indebted for the timely help he has given in various departments—in Medicine, in Education, in Fine Art, particularly.

One of the last acts of the late Dr. T. A. Russell was the presentation of a portrait of Dr. D. Bruce Macdonald, the Chairman of the Board of Governors, to his old friend. This portrait is the gift of a group of Dr. Macdonald's friends and colleagues, who wish thus to commemorate his long and signal services to the University of Toronto. He is one of the original members of the Board, appointed in 1906. The portrait, given by Dr. Macdonald to the University, now hangs in the Great Hall of Hart House.

THE WAR EFFORT

(1) By arrangement with the Department of National War Service at Ottawa and by order of the University Board of Governors, all male students of British citizenship over eighteen years of age received Military Training either in the Officers' Training Corps or in the Training Centre Battalion. More than a whole brigade—3,500—were thus under instruction for military service. In addition 425 graduates took training. Our chief problem was to secure room for drilling and for lectures. The C.O.T.C. proved a splendid source of supply for officers in the various training camps and in the Active Service Forces. The enrolment in the Department of Military Studies was the largest in the history of the course—forty per cent above last year. Many of the students in the Pass course for Teachers took Military Studies as an option.

(2) About 2,500 of our undergraduates and recent graduates, and 110 members of our teaching and administrative staff (mainly in the Faculty of Medicine) are now in the various combatant services or in special government departments. Up to the end of June, 25 had given their lives in the Cause, for the most part from the Air Force.

(3) The new Drill Hall and lecture rooms at 119 St. George Street have been the headquarters of Military Training and have been in constant use. We have also found accommodation in Convocation Hall, the examination halls, the Engineering and the Medical buildings, and indeed in any available building belonging to the University.

(4) Various other military organizations, such as the Royal Highlanders of Canada, the Civil Service Association, the 15th General Hospital, the Provincial Police have been granted the use of buildings or grounds when these were available.

(5) Research work on war problems, either directly for or in co-operation with the government, has been carried on actively in the following departments: Psychology, Biochemistry, Chemistry, Physics, Medicine, Medical Research, Pathology, Electrical Engineering, Physiological Hygiene, and Astronomy. In many of these projects the Superintendent's Office is assisting. Most of these researches are of a secret nature. Among the most interesting are those in aviation medicine, begun by Sir Frederick Banting and carried on by his colleagues and with the help of Dr. Bazett, Professor of Physiology in the University of Pennsylvania, who has been generously lent to us by that institution.

(6) Specific courses have been carried on for certain groups in the Armed Forces: intelligence testing, by Professor Bott; technical courses in radio for the Royal Canadian Navy, by Professor Burton and his colleagues in Physics and also for the training of radio technicians in the Air Force and for ratings in the Navy; mathematics classes in the Education Building for the R.C.A.F. under the charge of Mr. Dunlop; a course for dental technicians in the Dental Building; extension course in Aerial Navigation.

(7) The University of Toronto Women's War Service Committee has carried on work for the Red Cross and other war purposes, has arranged various study groups, and has organized a sub-committee for the reception of British Overseas children from some of the British universities. This sub-committee has under its care 147 children and 19 mothers; this splendid undertaking requires a monthly outlay of $1,600.

(8) Under Miss Parkes as Commandant, two hundred of the women under-

graduates formed a Women's Voluntary Service Training Detachment of the Red Cross Auxiliary Corps.

(9) A number of our staff have gone to Research Industries, Limited, for the making of optical glass and precision instruments. Professor E. F. Burton is one of the directors of the company, and one of our graduates, Colonel Eric Phillips, is general manager.

(10) Professor R. H. Fowler and Professor Sir Lawrence Bragg, as scientific liaison officers between Great Britain and this continent, have made frequent visits to the University laboratories during the year, and have expressed themselves as pleased with the work done and in progress.

(11) We are deeply grateful to the National Research Council for its generous grants in furtherance of various war researches.

(12) Special courses of lectures in various departments have set forth the fundamental issues of the war and the economic and financial problems involved. Members of our Economics staff have been called to the capital to serve on important economic committees.

THE FACULTY OF ARTS

One of the notable events of the year was the presentation of $10,000 from the Viking Foundation (established by Mr. Wenner-Gren, formerly of Sweden) to the University by Mr. Hans Lundberg for the purpose of developing our work in Geophysics; an address on "Applied Geophysics and Geology" was given on this occasion by Dr. E. A. Eckhardt, assistant to the Vice-President of the Gulf Development and Research Company, Pittsburg. We hope that this generous help will be continued and will lead to the ultimate establishment of a School of Geophysics in connection with the Department of Physics; this is the dream of Professors Burton and Gilchrist.

Professor Creighton, holder of a Guggenheim Fellowship in History for the year, returns at the beginning of the new term; and Professor Edgar McInnis, also of the Department of History, goes as Visiting Professor for a year to Bowdoin College, Maine.

I am glad that Dr. G. G. Coulton, Fellow of St. John's College, Cambridge, and one of the greatest mediaeval scholars of our day, will continue with us next year, and will give a course of lectures on "Life and Thought in the Middle Ages." Our staff and the senior students especially prize this opportunity of close contact with a great historian whose research has produced a veritable library of publications.

UNIVERSITY COLLEGE

Principal Wallace once more draws attention to certain urgent needs of the state college—especially a men's residence and playing fields for both men and women. I hope that as soon as the war is over, vigorous efforts will be made to provide these necessary equipments. The efficiency of the state college must be fully maintained or our whole academic status in Arts will be adversely affected.

THE FACULTY OF MEDICINE

The Dean draws attention to the proposed acceleration of the medical course by lengthening the period of instruction in each year, in order to meet a threatened shortage of medical practitioners in civilian life and medical officers for the Active Service Forces. This will involve much shorter holidays and thus a shorter opportunity for students to earn money in summer for the payment of fees and expenses during the academic year. It will be absolutely necessary, if this plan is to be successful, to secure from some quarter and especially from the government a loan fund on which students may draw in their time of training.

Throughout the whole Faculty the various departments are collaborating in research on war problems.

After various consultations the Board of Governors has decided it is desirable to establish in the Faculty of Medicine an Institute of Physiology under the direction of Professor C. H. Best. The Department of Physiology has through certain outside sources of revenue grown to large proportions. It has developed a real school of research in a field which gives promise of striking results. The details of organization have yet to be worked out.

THE FACULTY OF APPLIED SCIENCE AND ENGINEERING

Many of the recommendations made in Professor Dugald Jackson's report are being carried into effect. Such are a substantial common first year in basic subjects; fewer lectures and greater opportunity for the student to read and think; a larger infusion of the humanities, in English and in Economics; closer co-operation with the Alumni, through the formation of advisory committees for the various departments. A progressive school of engineering must keep in close touch with industry and its latest developments.

It is becoming increasingly difficult to secure suitable demonstrators, in view of the demands of war industries. We hope to secure skilled help in this field by the loan of men employed in some of the great corporations, who may give part-time service.

The new Dean, C. R. Young, has shown his public spirit in becoming Chairman of the patriotic organization—"The Friends of Poland."

THE FACULTY OF HOUSEHOLD SCIENCE

Provision will have to be made for taking in girls who have been studying at Macdonald College, Guelph, in the first and second years. The Dominion government has taken over the buildings for war-training purposes.

THE FACULTY OF FORESTRY

Dean Howe has retired after thirty-three years of service in this University. He succeeded Dr. Fernow, the first Dean of this Faculty and is himself succeeded by Professor Cosens.

The great event of the year has been the acquiring of six thousand acres in this province within easy motoring distance from Toronto, as an out-door forest laboratory for students in this Faculty. It will serve for demonstrations and experiments in Forestry. We are grateful to Mr. F. K. Morrow, a member of the Board of Governors, for his good offices in consummating the purchase, and to the provincial Department of Lands and Forests for practical help and generous co-operation. The acquisition of this forest plot marks a notable advance in the teaching of scientific forestry in Canada.

THE GRADUATE SCHOOL

Graduate students from all provinces of Canada, from Britain, and from the United States have enrolled in this school. It is a unifying factor in our Canadian life. Once again the Dean points out the need of more fellowships and scholarships to aid competent students to pursue the work of research in a Canadian university. The extent to which the spirit of research permeates the various departments of this University is evidenced by the catalogue of published researches found elsewhere in this report.

THE CHAIR OF CHINESE STUDIES

The Board of Governors have established a chair of Chinese Studies, the first incumbent of which is the famed Chinese archaeologist, Bishop William C. White, for nearly forty years a missionary in China. He has been recently Keeper of the Far Eastern Collection in the Royal Ontario Museum and has already written three notable volumes on Chinese Art, as illustrated through objects in this Museum. These have been published by the help of a grant from the Rockefeller Foundation. We have had in attendance at the University twenty Chinese students sent to us by the British committee who award the scholarships established by Britain from the Boxer indemnities. These students, not being able to attend British universities, have been sent to us in Canada. They are scattered over the whole University; some are in Law, some in Engineering, some in Science, some in Education, and all are excellent students. A central club room has been set apart and furnished for them in Wycliffe College. At first it is probable that only graduate students will take this course. The establishment of this Department at this crisis in China s great struggle against aggression will emphasize our goodwill towards that vast population which is helping us in the common cause. It will, I trust, help to create still closer relations in culture and commerce between China and ourselves. We look forward to a visit from His Excellency, Dr. Hu Shih, the Chinese Ambassador to the United States, himself a great philosophic student, when he may offer his cordial good wishes to this educational advance in our University.

THE SCHOOL OF LAW

The courses leading to the degrees of Bachelor and Master of Laws have been organized as the School of Law. The instructors are those who teach in the undergraduate Department of Law in the Faculty of Arts. This nomenclature brings us in line with that employed in most universities on the continent where Law is taught.

PHYSICAL AND HEALTH EDUCATION

This new course, under Dr. E. S. Ryerson's direction, marks a decisive advance. As Dr. Ryerson points out, the combination of a comprehensive course in Health Education with Physical Education has not previously been attempted at the university level. Graduates in this course will be able to teach in our schools both Health Education and Physical Education with the same efficiency as high-school assistants now teach Languages, or Science. The merging of the Margaret Eaton School with this new department or school strengthens our teaching staff, enlarges our constituency, and provides additional equipment. On the men's side of Physical Education throughout the University, our staff has been increased by the appointment of Mr. M. G. Griffiths, a well-trained and experienced teacher in this field.

THE SCHOOL OF SOCIAL WORK

This is the new name which has been given to the "Department of Social Science." The social sciences and social philosophy are a basic part of the preparation for social work—which is the goal of this special discipline. Dr. Stuart Jaffary has been promoted to be Director of the School and Miss Agnes MacGregor to be Associate Director. To the School has been given a Faculty Council on which are represented the immediate teaching staff of the School, members of other university departments who give instruction in the School, and a limited number of executives from the various social welfare organizations of Toronto. In this way the theoretical and the practical elements in successful social work are held together and in proper balance.

THE SCHOOL OF NURSING

Under Miss Russell's guidance and by the help of the Rockefeller Endowment this School of Nursing has become famous throughout the world. Its cosmopolitan character is evidenced by the fact that even in the present disturbed times there are students (sent by the Rockefeller Foundation) from Brazil, Portugal, India, and the United States who are taking the full three-year course, and that among the graduate nurses who are taking the one-year intensive course in public health nursing are students from Panama, Brazil, the United States, the Philippines, Fiji, and Japan. The present building is crowded; larger accommodation some day is most desirable. I think that academic rank should be given to the permanent members of the staff.

THE SCHOOL OF HYGIENE

Dr. Defries has been Director of this School since the lamented death of Dr. J. G. FitzGerald, as well as of the Connaught Laboratories. He has organized two new sub-departments, of Public Health Administration and of Nutrition (the increasing importance of which is generally recognized.) Advanced training is given in public health engineering; and special intensive courses have been provided for part-time public health officers. Dr. Defries gives an interesting account of the field-training centre established in the municipality of East York, which serves as a demonstration-centre of public health practices as conducted in an ordinary urban municipality, and supplements the facilities afforded by the Department of Health of the city of Toronto.

UNIVERSITY EXTENSION AND PUBLICITY

If teaching and extending the boundaries of knowledge are essential functions of a modern university, so also is the extension and distribution of knowledge. Under the vigorous and alert direction of Mr. W. J. Dunlop our Extension Department has grown to the stature of a college in itself with many appurtenances. The Pass course for Teachers is being taken by 570 students, who teach during the day and attend university lectures in the evening and in the summer. Their instruction is of the same standard as that given to the regular undergraduates; while their experience as teachers makes them keen and intelligent scholars.

The adult members of the evening tutorial classes number 2,642. Classes of university standing are arranged for any group in any subject, if the number enrolled is sufficient to warrant them.

One hundred and forty extension lectures have been attended by 15,768 persons.

The certificate course in business marks a new development in the field of business administration.

The Legion asked the University of Toronto through Mr. Dunlop to take charge of the educational work among the troops in this military district. Mr. Dunlop has admirably organized the teaching facilities in the camps; and is also conducting evening classes for members of the Air Force who need additional mathematical training. The teaching in these latter classes is voluntarily given by men who seek in this way to make their contribution to the war effort of Canada.

An advisory function is also discharged by Mr. Dunlop. Parents and prospective students come to consult him on the courses which seem best suited to capacity and inclination. This work has so developed that Mr. Dunlop may have to secure the help of a wise and sympathetic committee. Such consultation necessarily precedes registration in any faculty or department.

To gain helpful publicity for the various activities of the University, Mr. Dunlop is securing in his office the services of an experienced journalist. The results are already apparent, as clippings show which are sent in from newspapers across Canada. The Press can be of greatest help in creating an intelligent interest in education in general and in creating public opinion in support of higher learning and scientific progress.

THE LIBRARY

The Library now contains 394,178 books and 145,191 pamphlets—a grand total of 539,369. On account of Military Training, the time for student reading has been curtailed; in consequence there has been a decline of eight per cent from the circulation of last year. To this decline the natural decrease in men's attendance at the University has also contributed.

THE OBSERVATORY

The staff has been seriously depleted by enlistments for Active Service in the Air Force; but the astronomer has a special contribution to make to the training of air-men. Professor Young, however, steadily carries on the work of stellar photography, with his remaining colleagues. During the year 2,739 visitors were shown over the Observatory. The grounds are being steadily adorned with trees.

THE MUSEUM

The educational value of the Museum is increasingly recognized. The total number of visitors during the year was 247,783—an increase of 20,041 over last year. From out of town came 4,241 children; these were conducted over the most interesting portions of the Museum by skilled teachers.

The greatest single gift to the Museum of Zoology was the ornithological collection and library of the late Mr. J. H. Fleming—the work of a lifetime. This "most representative private collection of birds in the world" numbers 32,267 bird skins. It is being suitably stored and arranged for display. Members of the staff of this museum have also made a survey of the fauna in the Patricia portion of the Kenora District, and have gone so far as to visit Fort Severn on Hudson Bay.

Financial limitations have forbidden purchases for the Museum of Archaeology, but valuable gifts continue to be made. Among visitors who were delighted with the Chinese Collection in particular were the Governor-General and H.R.H. Princess Alice; Sir Shenton Thomas, the Governor of Singapore, and Lady Thomas; and Mr. Bertram Thomas, the famous explorer of Southern Arabia.

The Museum has suffered a severe loss in the death of the Chairman of the Board of Trustees, Dr. James Brock O'Brian. Under his charge the huge additions to the original structure were built. In these later years, the Museum was his very life. To him it owes an incalculable debt of gratitude.

I also chronicle with deep regret the death of Miss E. M. Greenaway on April 28. She had become a most efficient secretary and assistant in the Museum of Archaeology.

THE CONNAUGHT LABORATORIES

The laboratories are building up reserves of their products in the event of war conditions creating extraordinary demands. Among the year's production is a combined prophylactic vaccine against both typhoid and paratyphoid fevers and tetanus. This has been prepared specially for our armed forces. Reference is also made to the preparation of dried human blood serum for use in injections against shock. The general volume of the output seems still to increase in spite of fresh competition.

THE SUPERINTENDENT OF BUILDINGS

The material problems with which the University is always faced may be realized from Colonel LePan's report. Sixty buildings are supervised from his office, while heat and electricity are supplied to Victoria, Wycliffe, and Knox, and a small amount of power to Trinity College. Repairs and renewals on buildings (including the Museum) cost $88,024—approximately one-half of one per cent of the value of the buildings. The expenditure for fuel and purchased heat was $112,104. Twenty-six members of the staff in this Department have enlisted. The use of university accommodation for training, housing, and feeding men of the armed forces and the increase of war research problems have made heavier demands on a depleted staff. These demands have been promptly and cheerfully met. The average number of employees was 282. The salary and wage item amounted to about $350,000. The merchandise distributed through the superintendent's stores was valued at $113,000. During the year 24,876 accounts were passed for payment. Customs entries cleared were 2,560. The turn-over in the branch post office was $38,800; and the revenue derived from this office was $1,121. The total cost of operating the central heating plant was $155,906, as against $148,129 for the previous year. This difference was due to colder weather and an increase of 67 cents per ton in the cost of coal.

HART HOUSE

The Warden has been absent in England, serving as General McNaughton's personal adviser on an educational programme for the Canadian troops overseas. I hear excellent reports of his work. During his absence Mr. Gilley and Mr. Cowan have carried on the strenuous activities of Hart House. It has been possible to furnish meals not only for the regular students but also for the various units of the Active Service Forces who are receiving special instruction at the University, such as Air Force men, naval officers and naval ratings, and dental technicians.

THE MEN'S HEALTH SERVICE

We deeply appreciate the splendid services of Dr. George D. Porter who this year retires from the post of Director. He has laid the foundation for further advance in the important field of student health. He reports that the general health of the undergraduates is better, owing to the regular out-of-door Military Training. Of men in the first year the average height is 5 feet 9¼ inches, the average weight 145½ pounds; 141 are 6 feet and over with an average weight of 160¾ pounds. The Board of Governors has prescribed a health service for men in all the years and provided further facilities for carrying out the necessary medical examinations.

THE WOMEN'S HEALTH SERVICE

This has been re-organized and developed by Dr. Jean Davey. We shall lose her services as the government has appointed her to be Medical Supervisor of the Health Service of the Women's Auxiliary Air Service. Dr. J. A. McGeachy, her assistant, will take over our work with the help of two part-time medical assistants. The number of women undergraduates who will receive a medical examination will be considerably increased. This year 126 students had an examination in their last year, before leaving college.

We eagerly and hopefully look forward to the day when we shall have the sorely needed additional accommodation for supervised physical training and recreation.

ATHLETICS

For another year intercollegiate athletics have been suspended by agreement among the Heads of the various Canadian universities in Ontario and Quebec. Each university is free to arrange for local exhibition games. It was felt that it would be unseemly to hold university competition matches before cheering crowds, while other students were at drill; that there would be no time for practices and for travelling while Military Training demanded most of a student's spare hours; and that no unnecessary expenditures should be made in war days. In our own University, intra-mural games have provided adequate exercise; while a series of six athletic "Saturday Nights," sponsored in turn by one of the larger colleges or faculties, have given undergraduate men and women ample opportunity for recreation and social relaxation. The number of men who took Physical Training was 1,775; while 1,823 individual students (i.e., 51.8 per cent of the eligible student body) took part in 580 games. All this is, of course, in addition to the compulsory Military Training. The students have loyally supported the university authorities in their decision on the limitation of athletics.

THE STUDENTS' ADMINISTRATIVE COUNCIL

This representative student body continues to give wise and progressive leadership to the undergraduates, and to provide many general services for them. Three features of its activities should be noted: (1) The Diamond Jubilee edition of the undergraduate paper, the *Varsity*, of 48 pages with numerous illustrations. This is a valuable historical record of university doings for the past sixty years. (2) The Loan Fund, formed out of student contributions. Since the fund was created, a few years ago $33,781 have been loaned; last year the loans totalled $4,840. These loans are steadily and speedily repaid, so that the funds are available for fresh assistance to on-coming students. (3) The Employment Bureau found work this year for about 2,700 students. Without this chance of employment, many students would find it very difficult, if not impossible, to proceed with their courses.

Mr. E. A. Macdonald (now Captain and Adjutant of the Training Centre Battalion) is the permanent secretary for the Council, and Miss Marie Parkes, the assistant secretary, whose special sphere is the women's activities. I heartily thank them both for their constant advice and help.

THE ALUMNI FEDERATION

A heavier burden than usual has fallen on this year's President, the Rev. W. J. Little of Victoria College, owing to the absence of the Secretary, Mr. Byron Wood, on war service with the R.C.A.F., and that burden has been fully and successfully carried. He reports that the drop in membership was not so great as was expected on account of war conditions and that this maintenance of revenue combined with an increased revenue from advertising and economies in operation have resulted in a surplus which will help to offset further membership losses in the war. As the paid-up membership is only 3,655, we earnestly appeal to graduates to join the Federation. Loans amounting to $3,350 were made to twenty-four students from the various Alumni loan funds.

THE SCHOOL OF MISSIONS

Several members of our teaching staff have helped in the extensive and diversified programme of instruction in the Canadian School of Missions, by which men and women—most of them university graduates—have been better equipped for missionary service. The following include some who are on the staffs of the federated theological colleges: Sir Robert Falconer, Professor Dawson of Political Science, Professors Coggan and Taylor of Wycliffe, Miss Fidler of the School for Nurses, Dr. Norma Ford of Zoology, Professor John Line of Victoria, Professor McIlwraith and Dr. Nash of Anthropology, Professor Saunders and Mr. Riddell of History, Mr. Menzies of the Chinese Department in the Museum.

SPECIAL CONVOCATIONS

The honorary degree of Doctor of Laws (honoris causa) was conferred on the following: November 15, 1940—*The Right Honourable the Earl of Athlone*, Governor-General of Canada. March 7, 1941—*The Honourable Albert Matthews*, Lieutenant-Governor of Ontario; *The Honourable Jay Pierrepont Moffat*, United States Minister to Canada; *Sir Gerald Campbell*, K.C.M.G., F.R.G.S., Minister of the British Embassy, Washington; *The Honourable Leighton Goldie McCarthy*, K.C., Canadian Minister to the United States; *Air Marshal William Avery Bishop*, V.C., D.S.O., M.C., D.F.C., Director of Recruiting for the Royal Canadian Air Force. June 5, 1941—*Flora McCrea Eaton.*

SPECIAL LECTURES

Professor Thomas Greenwood, University of London, England—"The Aims of Social Philosophy."

Professor R. B. Mowat, University of Bristol, England—"The French Tradition" and "England in the Eighteenth Century." The news of his death when the plane on which he was returning crashed in England has brought profound regret to the notable company of British historians.

Professor G. G. Coulton, St. John's College, University of Cambridge, England—"School and College Life in the Middle Ages" and "Symbolism in Mediaeval Art."

Dr. Bertram Thomas, Arabian explorer and orientalist—"My First Crossing of the Great South Arabian Desert."

Professor Henri Grégoire, University of Brussels, Belgium—"The Living Interest of the Classics"; "Greece and the Balkans in relation to Byzantine History"; "Belgian Problems in the Light of History."

Mr. Oliver Lodge, England—"Three Critics and a Quarrel."

Professor E. K. Rand, Harvard University, Cambridge, U.S.A.—Under the auspices of the Pontifical Institute of Mediaeval Studies, "Virgil and Dante" and "A Romantic Approach to the Middle Ages."

Dr. J. A. Wilson, Director of the Oriental Institute, University of Chicago, Chicago, U.S.A.—"The Warmth and Colour of Ancient Egypt."

Mr. James Hillier, The Radio Corporation of America—"Electron Microscope."

Professor W. E. Hocking, Harvard University, Cambridge, U.S.A.—The Armstrong Lectures.

Mr. Warwick Chipman, K.C., Montreal, Que.—"Prospects of Democracy."

Professor John Baillie, University of Edinburgh, Scotland—"The Retreat through Dunkirk."

The Rev. Dr. S. M. Zwemer—"Present Religious Conditions in the Moslem World."

Dean O'Ferrall, Detroit, U.S.A.—"Salute to Britain."

Professor Reinhold Niebuhr, Union Theological Seminary, New York, U.S.A.—"Some Aspects of Present Day Religious Thinking."

Under the auspices of the Department of Political Economy, a series of lectures on *The Problems of Modern Government:*

Professor C. H. McIlwain, Harvard University, Cambridge, U.S.A.—"Historical Perspective and Recent Historical Developments."

Professor J. A. Corry, Queen's University, Kingston—"The Federal Dilemma."

Mr. C. H. Bland, Chairman, Civil Service Commission of Canada—"The Dominion Public Service."

Professor R. A. Mackay, Dalhousie University, Halifax—"Canada in the New Balance of Power."

Professor H. M. Clokie, University of Manitoba, Winnipeg—"Democratic Possibilities in a Totalitarian World."

Professor A. W. Macmahon, Columbia University, New York, U.S.A.—"Taking Stock of Federalism in the United States."

Under the auspices of the Department of Political Economy, a series of lectures on *Transportation*, arranged on the occasion of the retirement of W. T. Jackman, M.A., Professor of Transportation, and of the twenty-fifth anniversary of his appointment to the staff:

Professor H. E. Dougall, Northwestern University, Evanston, U.S.A.—"Comparisons in Canadian and American Railway Finance."

Professor G. de T. Glazebrook, University of Toronto—"Nationalism and Internationalism in Canadian Waterways."

Professor G. L. Wilson, University of Pennsylvania, Philadelphia, U.S.A.—"Some Basic Problems in the Public Regulation of Transportation."

Mr. N. D. Wilson, Consulting Engineer, Toronto—"Problems of Urban Transportation."

Professor W. M. Drummond, Ontario Agricultural College, Guelph—"Transportation and Agriculture."

Under the auspices of the Royal Canadian Institute:

Mr. Wills Maclachlan, Consulting Engineer, Toronto—"The Electric Utility in Canada."

Dr. Phillips Thomas, Westinghouse Research Engineer—"Adventures in Electricity."

Professor D. L. Bailey, University of Toronto—"Disease in Plants."

Dr. A. V. Douglas, Queen's University, Kingston—"Immensities of Time and Space."

Dr. Walter Clark, Eastman Kodak Company, Rochester, U.S.A.—"Photography's Part in Modern Progress."

Dr. H. G. Armstrong, Toronto—"High Flying."

Mr. C. J. Phillips, Corning Glass Works, Corning, U.S.A.—"Modern Miracles in Glass."

Mr. F. A. MacDougall, Superintendent, Algonquin Provincial Park—"Algonquin Park, its History and its Problems."

Mr. John Patterson, Controller, Meteorological Services of Canada—"A Hundred Years of Meteorology in Canada."

Professor L. A. Dubridge, University of Rochester, Rochester, U.S.A.—"Atom Smashing Goes to Work."

Professor T. F. McIlwraith, University of Toronto—"Man's Attitude to Nature through the Ages."

Dr. R. Brimhall, Civil Aeronautics Administration, Washington, U.S.A.—"Plans for the Future in Civilian Pilot Training."

Dr. J. O. Perrine, American Telephone and Telegraph Company, New York, U.S.A.—"The Artificial Creation of Speech."

Colonel F. C. Wallace, D.S.O., M.C., Royal Artillery—"Anti-Aircraft Artillery."

Dr. A. I. Willinsky, Surgeon, Toronto—"The Fundamental Principles of Amateur Movie Making."

Dr. W. J. Deadman, Hamilton General Hospital, Hamilton—"Scientific Aids to the Diagnosis of Disease."

Professor C. R. Young, University of Toronto—"The Achievements of Engineering."

Engineer Rear Admiral H. A. Sheridan, British Admiralty Technical Mission—"Ships and Men of the Royal Navy."

Dr. W. R. Thompson, Imperial Institute of Entomology, and University of London, London, England—"The War against Insects."

Dr. Douglas Johnson, Columbia University, New York, U.S.A.—"Topography in Relation to Military Strategy."

BENEFACTIONS

I draw attention to the large total of these during the past year—$382,926. The greater part of this sum has come from the National Research Council and from the Rockefeller Foundation for specific problems connected either with the war or public health.

Dominion Government Grants	
Aerial Navigation	$ 2,500.00
Astronomy	150.00
Aviation Medical Research Project—Banting	7,529.00
Aviation Medical Research—Banting—Low Temperature Altitude Chamber—Eglinton	30,000.00
Aviation Medical Research—Banting—Equipment for Plane for High Altitude	2,000.00
Aviation Medical Research—Bazett—Project No. A.M. 1	6,000.00
Aviation Medical Research—Price—Project A.M. 4	33,600.00
Aviation Research Physics—Burton	5,570.00
Aviation Research—Psychology ($11,477.64 less $500 retained at Ottawa)	10,977.64
Bacteriology—Greey	350.00
Banting—High Altitude Flying Project A.M. 1000	7,000.00
Barrett—Project C-1000—22	1,700.00
Best—Cockpit Lighting of Airplanes	1,241.65
Chemical Warfare—Lucas C-1000—2	2,000.00
Chemistry	871.11
Chemistry—Gordon—C-1000—1	7,660.00
Gordon—C-1000—27	4,000.00
Dental Technicians' Course	3,240.00
Electron Microscope Research	1,000.00
Greey—Project M-1000	5,000.00

Individual Chamber Project A.M. 1001—Banting	700.00	
Irwin—C-1000—18	450.00	
Medicine—Cleghorn—Project No. 9—1	2,000.00	
Medicine—Cleghorn—Project No. 9—2	200.00	
Navy Technical Class Physics No. 1	12,400.00	
Radio Technicians' Course	50,000.00	
Physics—Raman Effect	500.00	
War Project C-1005—1 Physics—Burton	1,000.00	
War Project P-1000—2 Physics—Burton	3,100.00	
War Project P-1000—3 Physics—Burton	7,388.70	
Young—Project C-1000—21	240.00	
		$210,368.10
Rockefeller Foundation		
Psychiatry Research	$20,000.00	
School of Hygiene Special—1	7,895.28	
School of Hygiene Special—2	4,925.00	
School of Hygiene Special—3	3,299.00	
School of Nursing	383.24	
		37,302.52
Eaton Endowment—Annual Payment		25,000.00
R. W. Leonard Bequest	$9,288.40	
R. W. Leonard Fellowship and Scholarship	4,000.00	
		13,288.40
Maple Leaf Fund Incorporated—U. of T. Women's War Service Committee—British Overseas Children		10,554.91
Carnegie Corporation		
Fine Art	$5,499.50	
Institute of Child Study	4,950.00	
		10,449.50
Wenner-Gren Geophysics Fund		10,000.00
Canadian Red Cross Society Grant—Blood Substitute Fund		7,500.00
Hans Lundberg Fund—Geophysics		7,240.99
The Right Hon. Sir Wm. Mulock—U.C. Men's Residence Fund		6,666.66
Organic Chemistry—Anonymous		5,000.00
Ontario Mining Association Grant		
Electron Microscope	$1,000.00	
Silicosis	4,000.00	
		5,000.00
Columbian Carbon Company Fellowship		4,525.27
Lachlan-Gilchrist Geophysics Scholarship		2,790.00
National Foundation for Infantile Paralysis—Inc. of U.S. Fund Paediatrics		2,640.00
Estate of late Principal Hutton—McCaul Scholarship		2,500.00
Josiah Macy, Jr. Foundation—Medical Research Banting—Neurogenic Research		1,649.25
Estate of late Sir Joseph Flavelle —Flavelle-Peacock	$750.00	
Sir Edward Peacock Retiring Allowances	750.00	
		1,500.00
Graduate Fellowships Donated by:		
Lady Kemp	$1,000.00	
Imperial Oil, Limited	500.00	
		1,500.00
J. S. McLean Fellowship—University College		1,250.00
Sir Joseph Flavelle Fellowship		1,250.00
David Dunlap Memorial Scholarships		1,000.00
Royal College of Dental Surgeons		
Extra-Mural Lectures	$500.00	
Dental Library—Harry R. Abbott Fund	500.00	
		1,000.00
Parke-Davis Donation—Greey Research		750.00
Merck and Company Fellowship Donation		700.00
J. A. Findlay Scholarships—Mechanical Engineering		600.00
Robert Simpson Company, Scholarships		550.00
Sir Frederick Banting Memorial Fund		525.00
Coleman Medal—Geology		508.40
John Northway Memorial Fellowship—Psychology		500.00
James W. Crocker Memorial Loan Fund		500.00
Sadowski Scholarships		500.00
International Nickel Company of Canada—"Inco" Scholarship		500.00
University College Alumni Association		
University College Alumni Association Scholarship	$375.00	
Maurice Hutton Matriculation Scholarship	125.00	
		500.00

Mrs. R. B. Noyes } for U. of T. Women's War Service Committee—	$250.00	
Dr. Cheever } British Overseas Children	200.00	
		450.00
Sir Edmund Walker Scholarship		450.00
Archibald Gilchrist Fund—Botany		400.00
Robert Bruce Scholarships		366.69
B'nai B'rith Scholarships		350.00
Sir John Cunningham McLennan Prize		300.00
Martha Alice Jones Bequest—Women's Union		300.00
School of Nursing Undergraduate Bursary Fund		300.00
Oral Health Magazine		
Wallace Seccombe General Proficiency Prize	$150.00	
Oral Health Thesis Prize No. 1	100.00	
Oral Health Thesis Prize No. 2	50.00	
		300.00
James Branston Willmott Scholarships—Dentistry		250.00
Robert A. Bryce, Esq.—U.T.S. Engineering Scholarship		250.00
Jule and Jay J. Allen Award		250.00
Percy Hermant Scholarship, Matriculation		250.00
Anonymous—Mary Keenan Award		200.00
Joseph Errington, Steep Rock Iron Mines Limited Fund—Geophysics		150.00
Boiler Inspection and Insurance Company Scholarship		150.00
Pan-Hellenic Association of U. of T. Prizes		150.00
John Macara, Barrister of Goderich, Scholarship		135.91
Sir John C. Eaton Memorial Scholarship—U.T.S.		120.00
Ontario Association of Architects Scholarship		100.00
Herbert Willson Scholarship		100.00
Wing Commander D. G. Joy Donation—Aerial Navigation		100.00
U.T.S. Old Boys' Association Scholarships		100.00
Robert Simpson Company, Bursary		100.00
University College Alumnae Scholarship		100.00
Association of Professional Engineers of Province of Ontario Scholarship		100.00
George Kennedy Scholarship		83.08
Sarah Kennedy Scholarship		83.08
St. Margaret's College Alumnae Scholarship—Social Science		75.00
Arthur Cohen Scholarship		55.00
Hollywood Theatre Prizes in French		50.00
Deborah Assembly No. 5 Bursary Order of Rainbow for Girls		50.00
Dr. R. A. Reeve Prize		50.00
Class of 1930 Mathematics and Physics Bursary		50.00
Hon. Chas. McCrea—Dent McCrea Scholarship		50.00
Public Speaking Association Bursary		50.00
Lambda Chi Alpha Alumni Association of Toronto—Ronald S. Saddington Medal in Pathology		30.00
Graduates' Scholarship in Law		30.00
Faulkner Medal—Psychiatry		26.90
International Accountants and Executives Corporation of Canada, Bursary		25.00
Archie B. Crealock Memorial Prize		25.00
University College Alumni Prize		25.00
Pi Lambda Phi Fraternity Prize (Kappa Chapter)		25.00
Labour Research Institute Prize—Law		25.00
Engineering Institute of Canada Prize		25.00
Ontario Medical Association Prize		25.00
Corner Club of Toronto Bursary		25.00
Toronto Brick Company Prizes, Architecture		25.00
American Society of Heating and Ventilating Engineers, Ontario Chapter Prize		25.00
Romain K. Ross Prize		20.00
British Association for the Advancement of Science Fund		17.33
Alumnae Prize in English		10.00
Fletcher-Johnston Memorial Prize		10.00
Squair French Library Fund No. 1		4.16
		$382,926.15

GENERAL CONSIDERATIONS

(1) All universities have a common problem to face. They must justify their existence by their works. This present mechanized war calls for the engineer and the scientist; it is largely dependent for success on the highly trained expert. Without the universities and their human product, it would be

seriously hampered. The universities are citadels of freedom; they cannot remain open in lands where freedom and justice have perished. Europe under the Nazi repression is practically now void of real universities. Universities are the homes and guardians of those spiritual, moral, and intellectual values without which our democratic way of life would cease to be, or would lose all worth. Urgent as are the immediate problems before us on account of the war, we must always keep in mind our long-view objective—"the training of intelligent and well-disposed citizens for life in the democratic state, and of forwarding the welfare of that state and of the world through its contributions to truth," goodness, and beauty.

(2) If much brain power in the nation is to be discovered, developed, and used, there must be more and larger scholarships, loan funds, or bursaries provided. The increased cost of higher education has made it harder for those who live in country, village, or town to take advantage of it. To equalize educational opportunities in any degree is to remove a cause of discontent and to enrich the higher life of the state.

(3) Periodically the place of the humanities in education comes in for discussion. The recent trend in Canadian universities seems to be away from the historic Arts course. It may well be that education at all stages in the future will be related increasingly to the ordinary practical activities of life and will teach a student to fend for himself. There is no need to fear that universities will lose touch with contemporary problems. It would, therefore, be wise to infuse as much of the humanities as possible into the professional courses and to maintain a true balance between the cultural values of the past and the urgent needs of the present. In the words of President Conant of Harvard—himself a great chemist—"if you believe that an education cannot be evaluated in purely utilitarian terms; if you believe that beauty and wisdom are still to be found in a study of the past; if you believe that new discoveries, however impractical, have importance for civilization . . . then you will rejoice that through our universities this generation may bring undreamed of treasures to sustain the future as we in turn have gained nourishment from the past." Our educational aim is to enable persons not only to make a living, but to build a life, a personality, and thus to help mould the world in which they live.

(4) I put in a plea for increasing attention to the Social Sciences. The mutual relations of human beings and their organization into groups will be forced upon the attention of individuals and governments in the period of reconstruction after the war. The human being is still the centre of social interest and well-being. Study of what has been and what is and what may be in social relations will point the way to a better world. I am glad to note that we are receiving new scholarships for the promotion of research in the broad field of social work.

(5) During a war the state becomes "the supreme co-ordinator, the final arbiter, the enlightened leader and partner in all phases of social and economic effort . . . the positive state is here to stay." This is probably true. Is it likely that after the war governments will gracefully and wholly retire from fields of activity they have long occupied? Even before the war the tendency of governments to intervene in non-legislative areas had grown apace. We now have Acts regulating the industrial and commercial life of the people and an army of officials to administer these Acts. It is probable that to a larger extent than in the past government supervision, planning, direction will continue, but will be defined not as intrusions into but as co-operation with the individual and commercial world. The state will thus need officials who have knowledge, experience, and probity. Is there not here an opportunity for the universities to pay special attention to the training of men and women for public service and administration? We have begun this work in the Department of Economics and Political Science and hope to develop it. We are glad that members of our teaching staff have already been called to government administrative posts.

(6) The absence of instructors on government work or war effort suggests a renewed emphasis on the purposes of lectures. They are not to give students undigested masses of knowledge but they are meant to guide, to test, and to stimulate them in acquiring knowledge for themselves. President Seymour of Yale has recently put it: "From the administrative point of view the formal courses of lectures which are offered will be the stronger the more carefully their number is restricted; from the student's point of view, the quality of his work will be improved the more it results from his own efforts." The university cannot and need not attempt to cover the whole range of human knowledge by providing innumerable courses of lectures. When lectures are given, the personality of the teacher, his clearness of enunciation, his own enthusiasm for his subject, his obvious mastery of his field, will make these lectures memorable events in the lives of students and will kindle the sacred fire of knowledge in their minds.

To the legislature of the province we are deeply grateful for its annual grant; we have tried to use wise economy in its expenditure. This is a large and complex institution, and it cannot do its task effectually without reasonable financial support. The vast and varied research work which has brought this University into the front ranks of world-famous intellectual centres has been supported mainly from private and other outside funds. To these generous benefactors, to the National Research Council, and to the great educational and scientific foundations like the Rockefeller and the Carnegie, we offer our sincere thanks. To the Chairman and members of the Board of Governors I am grateful for constant support and sympathy. To the administrative officers and deans, to the whole teaching staff, and to the student body, I am grateful for their loyalty, devotion, and co-operative spirit. The University is ultimately made by its teachers and students. May they continue to work together with all their might for the welfare of the University, of the Province, of the Dominion, and of all mankind.

Respectfully submitted.

H. J. Cody,
President

November 27, 1941.

REPORTS

REPORT OF THE DEAN OF THE FACULTY OF ARTS

The academic year 1940-1, the second passed under the shadow of the war, was marked by a tone of seriousness, as shown by the unusually high percentage of students successful at the May examinations. At the same time, the majority of the students carried throughout the year a programme of military training, or an equivalent to it.

About 56 per cent of those taking the qualifying examinations for specialists' standing were graduates of Toronto, and these accounted for almost 65 per cent of the successful candidates.

The special committee named by the President endeavoured to have the staffs responsible for the curriculum and instruction in the various honour courses consider the matter of content and the nature of the instruction. Many changes were made in the direction of including further pass subjects in honour course prescriptions, and arrangements were made to consolidate the instruction within one or more of the honour courses.

Many members of the staff fear that there is a growing tendency on the part of students to look to honour courses, with their special content, as something designed to supply the training for appropriate careers on graduation. Doubtless, the student's choice of an honour course owes something to practical considerations of its final utility and involves more than the mere recognition of his own academic interests and abilities. Nevertheless, it is fair to assume that what the staff wishes for the student is something quite general. It is that the student should acquire the habit of independent thought and develop the confidence that goes with it.

Every year the University opens its doors to a new group of students coming up from the secondary schools. The level of attainment among these has never been higher, which fact carries with it its own responsibility for the staff. Fortunately, the Colleges are multiplying their scholarships and bursaries and establishing a higher degree of contact with their own students.

S. Beatty

REPORT OF THE PRINCIPAL OF UNIVERSITY COLLEGE

Our academic work during the session which is just drawing to a close has been carried on in the midst of war and preparations for war, and with the consciousness that the work of the College must be concentrated in every possible way on the achievement of the national effort. Practically all of our male students have given much time to drilling and lectures in the C.O.T.C. or in the Auxiliary Battalion, and throughout the session many of them have left the College to join active service units. The whole student body has been conscious of a divided interest, and inevitably there has been a certain amount of disorganization in our academic programme. Professor Cestre was again unable to deliver the Alexander Lectures, and so, for the second successive year the lectures were omitted. We hope to have the lectures given next session by President H. J. Davis of Smith College, Northampton, Mass., who was formerly a member of our English staff.

I regret to have to record the death of Miss Jessie Barber on October 21, 1940. Miss Barber had been the highly efficient Dietitian of Whitney Hall for many years and had made a contribution of the highest value to the life of our women undergraduates. On October 23 the women graduates and indeed the whole College were greatly shocked and saddened by the death of Mrs. W. W. Evans who had served as President of the Alumnae Association for several years.

From the time of her graduation in 1912 Mrs. Evans had been one of the warmest friends of University College, and had endeared herself in a multitude of ways to graduates and undergraduates alike.

During the session three senior members of our staff have resigned:

Professor G. O. Smith, a graduate of Oxford University, from which he graduated with first-class honours in Greats, came to University College from Trinity College in 1907, and his reputation as a Latinist and stimulating teacher has long since been established. During the last two years he has been able to do his work only intermittently, but now that he is freed from academic duties his friends have every reason to hope that his health will be restored, and that he may long remain a familiar figure in our halls.

Mr. L. A. MacKay, Assistant Professor of Latin, has resigned to accept an Associate Professorship of Latin in the University of British Columbia. After a brilliant course in Classics here Professor MacKay graduated from Oxford University, and was appointed to our Classics staff in 1928. An unusually able teacher and scholar, he had associated himself with the literary and artistic life of the city in a most effective fashion, and his departure is deeply regretted by his colleagues and by the undergraduates.

Professor E. K. Brown has resigned to accept the Chairmanship of the Department of English in Cornell University—the second time within three years that this position has been filled by the appointment of a member of the English staff of University College. Professor Brown's outstanding ability was in evidence during his undergraduate course. After several years of study in the University of Paris he secured the degree of Docteur ès Lettres—an unusual achievement. He was appointed to our English staff in 1929, and has been here continuously except for two years during which he held the post of Head of the Department of English in the University of Manitoba. Few of our young graduates have had a more brilliant academic career. As a productive scholar, a great teacher, and as Joint Editor of the *University of Toronto Quarterly*, he has rendered notable service to this College, and our pride in his new appointment is tempered by our consciousness of the great loss which the College has sustained.

Two courses of public lectures were delivered during the session in the West Hall to very large audiences, the first on *Recent American Writers* and the second on *Canadian Literature To-Day*. The list of lecturers and subjects was as follows:—

Professor GILBERT NORWOOD, "Eugene O'Neill."
Professor H. R. MACCALLUM, "Archibald MacLeish."
Professor M. D. C. TAIT, "Paul Elmer More."
Professor N. J. ENDICOTT, "William Faulkner."
Professor BARKER FAIRLEY, "John Steinbeck."
Professor C. N. COCHRANE, "Carl Becker."
B. K. SANDWELL, Editor of *Saturday Night*, "The Background of Canadian Literature."
Professor J. R. MACGILLIVRAY, "Recent Canadian Fiction."
Professor L. A. MACKAY, "Recent Canadian Poetry."
Mlle M. MACDONALD, "French-Canadian Literature To-Day."

The following benefactions have been received during the year:

(1) From the estate of Martha Alice Jones, a legacy of $300 to the Women's Union.

(2) From the estate of the late Principal Maurice Hutton, a legacy of $2,500 to endow the McCaul Classical Matriculation Scholarship. Principal Hutton also left to the College certain seals, busts, bronzes, and books.

(3) From Professor Alfred Baker, his Byron collection of some two hundred volumes and two beautiful mahogany book-cases.

(4) From the Hollywood Theatre, $50.00 to be used as prize-money in the Department of French.

(5) From the Public Speaking Association, a bursary of $50.00.

(6) From the University College Alumni Association, $25.00 to be used as prize-money for a man of the graduating year.

(7) From the Corner Club of Toronto, a bursary of $25.00.

(8) From the Deborah Chapter No. 5 Rainbow, a bursary of $50.00.

Graduate fellowships in the gift of the College have been awarded as follows:

(*a*) The Reuben Wells Leonard Fellowship ($650 and free tuition) to Mr. Calvin Kinnunen for graduate work in Chemistry in this University.

(*b*) Two J. S. McLean Fellowships ($625 each) to Mr. S. J. Key in the Department of Fine Art and to Mr. E. B. McNaughton in the Department of Mathematics and Physics.

In recent years I have frequently reported to you my conviction that the place of University College in the scheme of Federation was becoming increasingly unsatisfactory, and I now feel that I should record this conviction in more formal fashion. The passing of the years has emphasized the artificiality of the whole arrangement for instruction in college subjects. No one would now insist that it was necessary or desirable that the University of Toronto maintain four independent staffs in Classics, Oriental Languages, German, or Ethics. The absurdity of the situation has been met by "integrating" the staffs of all the colleges in greater or less degree, with the result that in several departments the provincial College is no longer able to offer a complete programme of instruction. Our lack of residence and playing-fields persuades many students to register in other colleges to which they pay their tuition fees although they receive from them little or no tuition in return. During the last ten years we have lost half of our men students, and the appropriations for the College have diminished by some twenty thousand dollars. If the principle of "integrating" the college staffs is to continue, the further deterioration of the status of University College is inevitable. The achievements of the College in past years and the eminent character of its staff would seem to justify its being assigned a more dignified role in the scheme for higher education in Ontario.

M. W. Wallace

TRAINING OF STUDENTS FOR THE NAVY AND THE AIR FORCE IN FUNDAMENTALS OF SCIENTIFIC METHODS OF ANTI-SUBMARINE WARFARE AND ADVANCED RADIO IN THE DEPARTMENT OF PHYSICS

About January, 1940, the British Admiralty asked Canada to supply a number of scientists for the operation and maintenance of special scientific apparatus requiring the knowledge of advanced radio of such a nature as to be beyond the content included up to the present in text-books. There was unfortunately a considerable delay in meeting these requirements, but about April 1, 1940, Admiral Nelles offered to take thirty-one men in the Canadian Navy as Lieutenants or Sub-Lieutenants and to lend them to the Royal Navy but maintain them on Canadian pay. When this offer was made twenty graduates of Canadian universities were gathered together and recommended by the National Research Council for this Service. Of this twenty, six were graduates or graduate students of the University of Toronto: namely, E. J. Apps, B.A.Sc.; J. Convey, M.Sc.(Alta.), Ph.D.(Toronto); W. M. Gray, M.A.; J. G. Levy, B.A.; D. H. Robb, B.A.; and G. H. K. Strathy, B.A. It was realized at the time that most of these men were proceeding overseas under a handicap because with few exceptions they had had no special training in the radio field in which their work was to lie. This latter statement merely accentuates the fact that we had, at that time, in Canada very few young men with this advanced radio training.

The active special training undertaken in the Department of Physics for this service may be included under the following heads:

(1) Through the generosity of the Riverdale Kiwanis Club it was possible to carry on in the Department a summer course of two months from June 17,

1940, to August 17, 1940, for a class of eleven graduates of Canadian universities—this number to complete the total number of thirty-one which Admiral Nelles agreed to take on. The candidates for this course were passed on by the Naval Authorities and were as follows: D. B. Armstrong, J. D. Barber, R. L. Beatty, H. G. Burchell, S. J. Coombe, B. R. Holden, W. S. Joyce, L. B. Leppard, J. C. Maynard, B. E. Miles, G. H. Tidy.

(2) With the assent of the Senate and the Council of the Faculty of Arts the Department offered a special radio course as an alternative to the regular Division III of the fourth-year Mathematics and Physics course. Twelve candidates entered this course and completed it last May. Of these R. M. Battles, J. R. Mountjoy, and T. P. Sheppard have entered the Navy; E. A. French has entered the Air Force; J. D. Bain, J. G. C. Henderson, and H. G. Byers are employed in the manufacture of the special apparatus used by the Dominion-owned company Research Enterprises, Limited; and the rest are helping in the teaching of special war classes.

(3) At the instance of the Canadian Navy a class of fifty naval ratings was taken on February 1 for a three-month course in fundamental physics connected with anti-submarine work. This training incidentally involves also instruction in fundamentals of radio circuits. This course was finished on May 1, and on May 19 we started a similar class of sixty naval ratings for a similar three-month course.

(4) Towards the end of the academic year the Canadian Naval authorities selected thirty more recent graduates to be taken on as Sub-Lieutenants or Lieutenants for the Special Advanced Scientific Service. These men were enlisted about the middle of February and the Department of Physics was asked to give these thirty men a course similar to the one which was carried on last summer. Of this group of thirty, seventeen were graduates of the University of Toronto, one of Acadia, three of McGill, six of Queen's, and three of Western Ontario. This course also ended May 1. Fifteen of these men are already in England and fifteen are engaged, pending their departure overseas, in the production of the secret apparatus in the laboratories of the National Research Council.

(5) Early in February the Defence Department decided to ask the universities of Canada to put on a three-month course for the training of 2,500 radio technicians during the summer. Of these the University of Toronto has taken 500. The course began May 26 and extended for fourteen weeks to the end of August.

REPORT OF THE DEAN OF THE FACULTY OF MEDICINE

As the third year of the war approaches, it seems appropriate that we should review the contribution that the Faculty is making towards the national effort that is necessary for victory. This contribution has consisted, up to the present, in supplying specially trained medical personnel to the three branches of the armed forces, and in conducting whatever researches have been suggested or requested by the Medical Services or the National Research Council. Now it is proposed to add to these a rearrangement of the curriculum so that the graduation of our students may be speeded up and the supply of doctors increased.

Reference is made in the departmental reports to the individual members of the staff who have enlisted. A total of 54 have gone, and when one considers this number in relation to the size of the staff it is very creditable that it has been possible to carry through the curriculum with so little disturbance. It is a fair statement to make that up to the present the courses have been conducted as thoroughly as in peace-time and that the graduates of the past two years have had as good a training as their predecessors. This is in marked contrast to what obtained at this stage of the last war when the whole Faculty was in a state of disorganization.

A review of the activities of the departments cannot fail to impress one with the great quantity and the variety of the research being conducted. It will be observed, however, that when compared with other years, there has been a good deal of curtailment of general research and replacement of it by research on pure war problems and by routine activities which are part of the war effort. Thus in the Banting and Best Department of Medical Research most of the work has been aimed at the solution of problems of the Air Force. Under the leadership of Professor H. C. Bazett who has been lent by the University of Pennsylvania to the Department for the duration of the war, a group of fifteen research workers have devoted their whole time to these problems. The results have been important, but being war secrets cannot be recorded here.

In the Department of Physiology the chief activity has been the development of the Canadian project for the preparation of dried human serum. This has now reached very large proportions consisting of the regular collection of blood from thousands of donors, the reduction of the blood to the form of a dry powder, and the shipment of it in suitable containers to the army. The difficulties that have been met in the schemes for supplying armies with sufficient blood substitutes to meet the necessities of large casualty lists have led to a search for substitutes for blood, and the studies of Professor N. B. Taylor and Dr. E. T. Waters with solutions of isinglass give promise.

Studies on the control of infection by the new sulphonamide drugs continue to hold the attention of all the clinical and several of the scientific departments. The details of these will be found in the individual reports. Among them may be mentioned specially the work in Bacteriology by Dr. Phillip Greey and that of the Departments of Medicine, Paediatrics, and Surgery.

What seems to be an important contribution to the general knowledge of infection of wounds is that of Dr. Ronald Hare of the Department of Hygiene and Preventive Medicine, whose studies indicate that the streptococcal infections which were the cause of so much disaster in the last war did not occur at the time of the wounding but were introduced later from air which had been contaminated from infected throats or from the infected wounds of other patients. He recommends great intensification in measures to prevent the unnecessary infection of wounds.

As usual, the research laboratories of the Hospital for Sick Children continue to produce good work. An important contribution this year from the Department of Paediatrics, is the demonstration that the prothrombin content of the infant's blood at birth can be much increased by administration of an adequate amount of vitamin K in the diet of the expectant mother. It is hoped that this will eliminate haemorrhagic disease in the newborn. This laboratory continues to co-operate with the Ontario Agricultural College and with the Dominion Departments of Agriculture and National Health in the study of the vitamin content of Canadian diets.

A review of the departmental reports will show the marked tendency of both the clinical and the scientific departments to collaborate with one another in important researches. Thus the combined studies of the Departments of Physiology and Anatomy and of the Departments of Physiology and Paediatrics and Anatomy are examples. This willingness of one department to take an interest in the problems of another restrains expanding costs of administration and ensures really expert assistance.

The rearrangement of the curriculum which has been adopted by the University to meet war conditions arose from a request from the Director-General of the Medical Services in Ottawa for an increased supply of young graduates for service as medical officers in the armed forces. This request was discussed at a meeting of the deans of the medical schools held in Ottawa and it was agreed by resolution:

(*a*) that the Medical Schools of Canada be requested to speed up the graduation of medical students during the present war emergency;

(*b*) that the hospitals in Canada be asked to accept eight months' internships in lieu of twelve months;

(*c*) that it be requested that the provincial regulations be modified to permit the curriculum to be completed in a shorter time than presently required, provided this is done without prejudice to a sound medical training;

(*d*) that because a considerable proportion of medical students depend for maintenance and tuition on their vacation earnings, the Dominion government be asked to assist in the financing of students and instructional staff where this is necessary;

(*e*) that in view of the fact that the graduation of medical students is to be speeded up for war purposes, these students should be exempt from military training during their clinical years.

Following the presentation of this resolution to the government and before its adoption by the Faculty, a request came from Ottawa for an estimate of the financial assistance the University would require. While this information was being gathered another message was received to the effect that owing to the nature of the financial estimates submitted by various medical schools the government considered it inadvisable to proceed at present with the proposed arrangement for the early graduation of medical students.

However, as the matter of an adequate supply of medical officers for the armed forces and of doctors for civilian needs is so urgent, and as the Medical School of the University of Toronto supplies almost half of the graduates in Medicine in this country, the University decided to go ahead with the scheme of speeding up the course and to leave the matter of the financial assistance required for solution at a later date.

The plan adopted involves the advancement of the day of opening school from September 23 to August 25 and the extension of the spring term from the usual closing date of May 15 to June 27. That is, an additional ten weeks will be added to each academic year, at the expense of the usual holidays. The University feels that while this may come as a hardship to some students who depend for a portion of their financial support on work done in the long summer vacation, nevertheless the continuance of four and a half months holidays in war-time is not justifiable and would leave both Faculty and students open to criticism of slackness in the national war effort.

Fortunately it has been possible to make this change without seriously disturbing the curriculum. Under the six-year plan each student spent six times thirty, or one hundred and eighty weeks in school, and this is so also in the new course. The only serious upset is in the internships. At present the students graduate in June and enter hospital for one-year rotation service on July 1. Under the new plan, as graduation day is advanced four months in each year, it becomes necessary to reduce the internship to eight months. However, while this involves a sacrifice on the part of students and hospitals, it is a compromise which both will be willing to accept.

The net result of these changes will be that on May 1 next, one hundred and twenty-five doctors from this school will enter hospitals as interns, thereby making available for the army a corresponding number of last year's graduates, who will have completed their internship. Another hundred and twenty-five will be ready for interning at the end of December, thus releasing the preceding group for the army, and so on every eight months. A student entering as a freshman this year will have graduated and completed his rotating internship in a little over five years instead of seven as in the past.

As a result of these changes in the medical curriculum it has been necessary to discontinue for the duration of the war the honour course in Biological and Medical Sciences. The students in the Arts course have been given the option of transferring to the equivalent year in Medicine or to some other suitable course in Arts, and almost all have chosen the former. It is a sacrifice, of course, for these students to have to give up their course in Honour Science but as practically all aim at ultimate transfer to Medicine, the sacrifice, when the character of the times is considered, is not too great.

A change of major importance was made this year in the examinations for the M.D. degree and for licensure in the Medical Council of Canada. Formerly the examinations for the latter took place a week or so after the University examination and were the cause of much expense and trouble for our students. Through the persistent efforts of our Assistant Dean, Dr. E. S. Ryerson, who for several years has been a member of the Medical Council, an arrangement was made whereby the written portions of the two examinations were taken co-incidentally. This new plan was tried out for the first time last June and seemed satisfactory to all.

The establishment of the new course leading to the degree of Bachelor of Physical and Health Education will be of interest to our graduates. This course is not a responsibility of the Faculty of Medicine but several of the courses, such as Anatomy, Physiology, and Hygiene and Preventive Medicine are given by our departments. The course qualifies the candidates for admission to the College of Education, into which the majority will go, preparatory to accepting appointments as physical directors in the secondary schools. The new course is under the direction of Dr. E. S. Ryerson who has been much interested in its development.

Just before he died, Lord Lothian, British Ambassador to the United States, asked the Rockefeller Foundation whether it would consider the possibility of giving a number of British medical students the opportunity to complete their training in the medical schools of the United States and Canada. While medical students in England are not subject to draft, the air raids have imposed excessive demands upon all medical schools and teaching hospitals. Not a single one of these institutions in London has escaped bombing. The conditions for thorough and adequate teaching in Medicine are therefore severely deranged. A considerable number of the teachers, moreover, have been called to military or special civilian duties, and, together with the profession as a whole, are exposed to injury and death in a measure that heightens the importance of adequate training for those who will be their successors.

Lord Lothian's suggestion was warmly received by the Rockefeller Foundation which at once appropriated $100,000 to initiate a plan of training British medical students in America. Twenty-five leading medical schools in Canada and the United States, among them our own, have indicated their cordial willingness to accept these new students and we have been informed that they will be here for the opening of school. Their expenses will be met from the Rockefeller fund for the period of their clinical training and a rotating internship. The Foundation has indicated that if the scheme works well it will be broadened to include larger numbers of students.

In addition to these British medical students we have also seven Norwegians whose medical training we shall complete sufficiently for them to join the medical service of the Norwegian Air Force now training in Toronto.

Reference has been made in previous reports to the use of the Moss Aptitude Test as an aid in selecting those students who will be promoted from the first to the second year. In the United States this test is applied before the student is accepted in a medical school but with us, owing to the fact that we accept all applicants who have the senior matriculation, the test is not applied till November of the first year. Exhaustive studies have been made by Miss Mary Salter of the Department of Psychology on the predictive value of this and other tests, and her conclusion is that there is a close relationship between the scores obtained in the Moss test and the grades subsequently obtained in the examinations. She points out that by combining the results of the aptitude test and the matriculation gradings we have a method of predicting the students' performance, both in the preclinical and clinical years, that is so accurate that it might well be used in selecting those students for promotion to the second year who are likely to be successful throughout their course. She points out, however, that the Moss Aptitude Test is somewhat unfair to Canadian medical students as it is based largely on the study of the premedical sciences, a study which the Canadian student does not undertake seriously until he is already in the first year of the medical school. She proposes, therefore, to design a medical aptitude test particularly adapted for Toronto students. It will place more stress on general intelligence and less on technical knowledge and will eliminate those features that seem unfair. The Department of Psychology is much interested in the study and the Head of the Department, Professor Bott, hopes to make a distinct contribution to the problem of selecting the best students.

Many honours have come this year to members of the staff. Dr. G. E. Richards was elected Vice-President of the American Roentgen Ray Society and was awarded the bronze medal of the society for his work on the radiological treatment of cancer of the tongue. Dr. R. R. Graham was elected President of the Interstate Postgraduate Medical Association. Professor C. H. Best has been appointed a Scientific Director of the International Health Division of the Rockefeller Foundation. He has been awarded the Purser Lectureship in Trinity College, Dublin, and the Harvey Lectureship in New York. Dr. J. H. Elliott was elected President of the American Association of the History of Medicine. Dr. Duncan Graham was appointed a member of the National Research Council to fill the vacancy left by the death of Sir Frederick Banting. Dr. Malcolm Cameron was re-elected President of the Council of the College of Physicians and Surgeons of Ontario, and Dr. E. S. Ryerson, President of the Medical Council of Canada. The Dean was elected President of the American College of Surgeons.

The Faculty noticed with pleasure the award of the D.Sc., *honoris causa*, to Dr. A. E. Mackay of Portland, Oregon, by the University of Oregon. Dr. Mackay was a graduate of Toronto in 1887 and has had a distinguished career as a member of the Faculty which has now honoured him.

The Charles Mickle Fellowship for this year was awarded to Dr. James Bertram Collip, B.A.Tor., M.A.Tor., Ph.D.Tor., D.Sc.Alberta, M.D.Alberta, for his contributions in the study of the physiological effects of the pituitary hormones. Dr. Collip, it will be remembered, was associated with Sir Frederick Banting in the researches on insulin. Since those early days he has continued to make great contributions to medical science. He fills the post of Professor of Biochemistry at McGill with great distinction.

The Donald C. Balfour Lecture for 1941 was delivered by David Cheever, A.B., M.D.Harvard, F.A.C.S., Associate Professor of Surgery, Emeritus, Medical School, at Harvard University, on "War, Its Tolls and Its Tributes." The occasion included also a celebration of Dr. Primrose's eightieth birthday.

In April, 1941, the Board of Governors appointed Dr. C. H. Best to succeed Sir Frederick Banting as Director of the Banting and Best Department of Medical Research. He will continue as Professor of Physiology but will relinquish his appointments as Professor of Physiological Medicine and Associate Director of the Connaught Laboratories. The University is singularly fortunate in having available for this great appointment one who is not only in the front rank in medical research but one who through his association with the discovery of insulin is the natural successor to the chair which was established to commemorate that great event.

Another appointment of interest was that of Dr. Robert D. Defries who succeeds the late Dr. J. G. FitzGerald as Director of the School of Hygiene and of the Connaught Laboratories. Dr. Defries was associated with Dr. FitzGerald in these two institutions from the early days of their development and has been Acting Director for the past two years. His appointment ensures the maintenance of these University interests at a high level.

The close of the present year saw the retirement of Dr. George M. Biggs as Professor of Oto-Laryngology and of Dr. Wm. H. Lowry as Professor of Ophthalmology. These gentlemen have both felt that in spite of war-time the strain of directing the Department at the University and at the General Hospital, combined with private practice, was more than they could face for another year. They have, therefore, brought to a close a long and faithful service to University and hospital. To fill the places left by their retirement, Dr. Angus Campbell has been appointed to the Chair of Oto-Laryngology and Dr. Walter W. Wright to that of Ophthalmology. Dr. Campbell has been a member of the General Hospital staff for many years and simply steps up to become Director but Dr. Wright who has been Head of the Department at the Hospital for Sick Children must transfer from that institution to the General Hospital.

This year will forever stand out in the annals of the University of Toronto as the year of the death of Sir Frederick Banting. This is not the place for an extended reference to his life and work but it is appropriate that we should pause to reflect that this young man from a small Ontario community became one of the greatest benefactors of the human race and brought his Alma Mater to the very forefront among the universities of the world.

It is my sad duty also to refer to the death of Dr. Kennedy Crawford McIlwraith, Professor Emeritus in Gynaecology and Obstetrics. Dr. McIlwraith served the University long and well and whole generations of our graduates will remember him with gratitude.

W. E. Gallie

REPORT OF THE DEAN OF THE FACULTY OF APPLIED SCIENCE AND ENGINEERING

In the session now concluded, covering the second year of the war, this Faculty has had to contend with considerable dislocation. It is to be recorded that these difficulties have been met in a most gratifying manner on the part of staff and students alike. The enthusiasm, keenness, and diligence of all have been most marked, not only in academic work, but in student activities and other affairs of the University.

It has been most encouraging that notwithstanding the various distractions due to the war the students have applied themselves with a fine spirit of earnestness and ambition to learn all they could with a view to early application of their applied science education. This spirit was especially encouraged by the staff, and the response was reflected in the good performance in the examinations at the end of the academic session. The students realized that in this engineers' war they would be called upon to take a most important part and that the sooner they were prepared for their special work the more value they could be in the war effort.

The student attendance in this Faculty for the past session proved to be in accordance with our anticipations. The young generation seems to have realized the necessity for engineers and applied scientists in the service of the country, whether at home, in war industries, or overseas. The first year registration was 338, which was slightly higher than the previous year. The attendance in the whole Faculty was 985, compared with 961 in the previous year. The staff has, in addition, 19 graduate students to whom instruction was required to be given. The total attendance in the Faculty has, therefore, now passed the thousand mark.

The results of examinations have been quite gratifying. In view of the great demand for senior students in war industries, and, indeed, for the war services themselves, a new plan was inaugurated in January, whereby the work of the session was speeded up in the third and fourth years. Instructional work was compressed into slightly shorter periods, and the usual annual examinations in April were replaced by term examinations and tests, held earlier in the term. This enabled the graduating class to leave for service or war industries by

March 15, and the third year to be out by March 31 for the same purposes. The first and second years were carried on in the usual manner, having their regular examinations in April, whereby they were out by the end of April, the usual time.

In the examination returns the same procedure was followed again in respect of those students who gave a large part of their time in Military Training in the Canadian Officers' Training Corps. By resolution of the Council, upon satisfactory detailed reports from the Commanding Officer of the C.O.T.C., wherein marks were awarded for efficiency shown, supplements not exceeding 10 per cent were added to academic marks. This worked quite satisfactorily and the results were such that this procedure appeared well justified. The same plan was followed for students taking the prescribed Military Training with the Training Centre Battalion, except that the supplement was restricted to 5 per cent.

The foregoing application of supplements to marks in academic examinations due to time spent and efficiency shown in Military Training resulted in a total number of thirty-two students in all years passing in the work of the year, who would have failed if academic marks only had been considered. This was regarded as a small number, and reasonable, in view of the large amount of time necessary to be given to military work. In applying this supplementary marking to students for honour standing, the military bonus was reduced by 50 per cent; this resulted in three students in the first year, fifteen in the second, nine in the third, and fifteen in the fourth, a total of forty-two, who were raised to honour standing by the military bonus. The military bonus had the effect, also, of raising six candidates in the fourth year to the status of graduation with honours.

In accordance with a resolution of the Council, seventeen fourth-year students entering His Majesty's Forces, and thirteen of the same year entering upon urgent war service, were exempted from lectures and laboratory work in the latter part of the session, and were recommended for their degrees at the June Commencement.

In view of the increasing demand for young engineers in connection with the war, consideration was given during the winter to the possibility of holding a summer session, by means of which students in the third year might be graduated some months earlier even than arranged this present session. Upon examination, however, it was found that such a plan of suddenly telescoping the senior years would work a hardship for students who were dependent upon summer earnings to pursue their university courses. Moreover, it was found, somewhat unexpectedly, that the demand for students in industry, notably in Chemical Engineering, was such that employers who had already made their arrangements were not prepared to release students to carry on with summer courses. The element of time in which to make arrangements for such changes was also a deterrent. In consequence of these difficulties the question of speeding up the instruction and the graduation of classes could not be further pursued at that time.

The study of curriculum revision which was commenced last session, arising out of the survey and report of Professor Dugald C. Jackson, was intensively continued during the present session. The Curriculum Committee of the Council continued its work with many meetings, and its deliberations in the form of reports to the Faculty Council culminated in the adoption of a curriculum in March which is now embodied in the Calendar for 1941-2, just now issued. The main features of consideration were as discussed and suggested by Professor Jackson in his report, in combination with the studies of the Curriculum Committee and its Sub-Committee, which, as detailed in my report last year, made an extended tour and study, in the spring of 1940, of twelve other engineering faculties on the continent. The main features in which revisions were made were actuated by a desire definitely and considerably to unload the curriculum, an aim which has long been under consideration.

In the new curriculum the first year in all departments has been brought into a substantially common content. Slight departures have been retained in Mining, Metallurgical, and Chemical Engineering. It has, of course, been impossible to bring Engineering Physics and Architecture into this common combination.

Realizing that both students and staff have in recent years been very much overworked by a crowded curriculum and long working hours, the working week of assigned hours has been reduced to thirty-three hours, and this has been strictly adhered to in the new curriculum and resulting time tables.

In the teaching of Mathematics, the principle of framing instruction along special lines has been extended and in order to bring this into a more formal practice, a joint committee from the Faculty Council and the Department of Mathematics in the Faculty of Arts has been set up.

Joint instruction in Chemistry has similarly been provided for by expanding the existing inter-departmental co-operation. Instruction in Chemistry is being confined to the first two years, except in Mining, Chemical, and Metallurgical Engineering, and Mining Geology. Instruction in Engineering Chemistry is to be directed by members of this Faculty, since they have a lively appreciation of the practical aspects of the subjects in this field. Chemical work is being arranged along these lines by an informal co-operative committee somewhat similar to that in Mathematics.

The view held for some years that students of this Faculty should have more instruction in English has been given effect by doubling the time given to it; lectures are to be given, as heretofore, in the first year, and now, also, in the third year, in "Report Writing."

For many years it has been realized, also, that students in this Faculty should be more widely instructed in Economics. This has been strongly stressed by Professor Jackson and the Engineering alumni. The result of study in this field is that provision is made for much more time to be devoted to this subject. Instruction is now to be given by the Department of Political Economy, under the direction of a special joint committee now set up with members from that Department and the Council of this Faculty.

A further important suggestion now to be carried with full effect is the very considerable expansion of co-operation with the Engineering alumni. There has been for many years an informal degree of co-operation between the departments and the alumni, but it is now proposed to regularize this by formal advisory committees, which it is recognized will prove most beneficial to both the staff and alumni, as well as to the University generally.

In connection with the extensive study of the curriculum and the vast amount of labour involved in it over these two sessions, I wish especially to mention favourably Professor Treadgold, Chairman of the Curriculum Committee, and Professors Angus, Bain, and Young, who gave a great deal of their time and effort to its reconstruction. I desire, also, to mention Professor Zimmer, who, as Chairman of the Calendar Committee, spent long hours and much diligence on the compilation and editing of the new volume.

As might be expected, the war situation has had a most serious effect upon the staff of this Faculty by drawing away many of its strong members, both senior and junior. These were full-time members of the staff, and it has been necessary to replace them oftentimes on short notice by others who likewise would require to give their full time. To find suitable substitutes of this kind has been most difficult, as engineers are in such great demand for war work. Such members of the staff in active service are eight in number, while six are on the reserve in training on part-time. Other members who are making a direct war contribution in outside industry on part-time are twenty in number, while eleven are engaged on special war research work in the University.

The administration work in the Faculty during these two war years has greatly increased in volume and complexity. Problems have constantly arisen amongst staff and students who have been in such demand. These have been combined with conditions of service and employment, which have had to be met both in the University and outside. I wish particularly to refer to the greatly increased labour thus involved in the Faculty Office, and to mention especially the cheerful and most efficient services of Lieut.-Colonel W. S. Wilson, the Secretary, and Miss Edith Birkett, the Assistant Secretary of the Faculty.

Notwithstanding the pressure of the regular academic work and the complications of instruction during the past year, research work has continued with a quality and to an extent which at the start of the session was thought to be impracticable. War activities, however, had a close relation to most of the research work done, and the enthusiasm of the members of the staff who have carried these on, together with their assistants, is much commended.

A report of the School of Engineering Research, containing a list and short description of each research carried on, goes forward concurrently with this report. It will be observed that twenty-two researches were in progress throughout the session.

It is with regret that I now am retiring from the post of Dean of the Faculty after a period of twenty-two years. My service has spanned the time between the two wars in which Canada has been engaged, as I assumed the post on July 1, 1919, and during this time the Faculty has undergone many changes. The number of students has much increased and our graduates have more than ever become active and important elements in the development of the country. I wish to take this opportunity, in my last report, to express my deep gratitude for all the helpful co-operation I have continuously received from the staff of this Faculty, as well as from the University generally, and for the loyal support of students and graduates throughout this time.

To my successor, Professor C. R. Young, now named as Dean of the Faculty as from July 1, I desire to convey my heartiest wishes for success in this post, which, with his fine administrative ability, his long University experience, and wide professional prestige, I am confident he will have.

C. H. Mitchell

REPORT OF THE SECRETARY OF THE FACULTY OF HOUSEHOLD SCIENCE

The registration in this Faculty has been about the same as it has been for recent sessions, with a considerable proportion of the students being admitted to advanced standing. Three students have been registered in the second year, after taking work at the University of British Columbia, which was followed, in the case of two of them, by work at Macdonald College, Quebec. There have also been twenty-two students admitted to the third year, who had completed the regular two years' course at Macdonald Institute.

In the last few years, it has been found that, while many of the students coming to us from Macdonald Institute do very good work, others have had difficulty in completing the third year's work and the requirements for admission have, therefore, been raised slightly. We have, also, had much consultation with this Institute as a result of the closing of the college at this time, due to the handing over of a large part of the Ontario Agricultural College to the Air Force. We are arranging to vary our second year's work to some extent, so that students who have the necessary standing for admission to the University and who have completed one year of work at Macdonald Institute, may enter our second year and so proceed to the Bachelor of Household Science degree without loss of time.

Like other faculties, we have somewhat changed the arrangements for collection of fees, giving more prominence to provision for health service.

C. C. Benson

REPORT OF THE DEAN OF THE ONTARIO COLLEGE OF EDUCATION

Under the pressure of war conditions, there was a further decline in enrolment at the Ontario College of Education. This decrease was most pronounced in the specialist courses in Mathematics, Mathematics and Physics, and Science. Again consideration was extended to men enrolled in the C.O.T.C. and provision was made to release men of military age to take advantage of the work of the Training Centre Battalion. Mr. E. L. Daniher devoted most of his time from Christmas to Easter to collaboration with Mr. F. S. Rivers in the production of History courses for the Canadian Legion Educational Services. Dr. A. C. Lewis, Mr. G. A. Cline, Mr. G. N. Bramfitt, Mr. B. C. Diltz, and others of the staff were tireless in various defence activities, in addition to their regular duties.

In the High School Assistants' course, the final period of practice teaching was extended and in the First Class Certificate course, practice teaching was provided in rural elementary schools, in addition to the usual practice in the city schools. With the co-operation of the Library School a supplementary course in School Librarianship was introduced. By this new course, small secondary schools in the province are enabled to secure teachers qualified to organize and administer school libraries on a part-time basis.

The Library School reports a decrease in its enrolment. There were a number of last minute withdrawals due to war conditions and increasing opportunities for employment. This appears to be in line with prevailing conditions in American Library Schools. Thirty-four candidates received the Degree of Bachelor of Library Science. In addition nineteen graduates of the School previous to 1937 received the degree at the spring and fall convocations. There were no registrations in the course leading to a University Diploma. This is accounted for by the restrictive regulations permitting only librarians with a year's successful experience to register in the Diploma course. Major Angus Mowat, Instructor in Administration of Libraries, was absent on military service; Mr. F. C. Jennings, Chief Librarian of the Ottawa Public Library, kindly consented to take the lectures in Administration of Libraries. The Director of the Library School was asked to collect French books for the camp library at Petawawa. Donations from members of the staff of the University were generous and these, together with other gifts, made up a gratifying collection.

The *School*, which has been published by the College for twenty-nine years, experimented in a new field this year by publishing two *Supplements*, which were included in the issues for January and June. The first of these contained reports of educational research from all parts of Canada; the second, a survey of educational progress contributed by the various deputy ministers of education and equivalent officials in Canada and Newfoundland. During the past two years the Manitoba Department of Education has ordered the distribution of the elementary edition of the *School* to some 1,800 teachers of that province. The Editor, since the death of Professor G. M. Jones in January, 1940, has been Dr. C. E. Phillips.

Dr. George A. Ferguson, B.A. (Dalhousie), Ph.D. (Edinburgh), joined the staff of the Department of Educational Research during the session, on his return to Canada from Edinburgh where he studied under Professor Godfrey H. Thomson. Three research fellowships were granted for the session to Miss Margaret Frazer, Miss Georgina Whittaker, and Mr. A. J. Bohnen. Dr. R. W. B. Jackson guided the numerous research projects undertaken by the various members of the Department, and the following tests were standardized and published for use in Canadian schools: Dominion Group Test of Intelligence—Junior, for Grades 4, 5, and 6; Dominion Primary Reading Test, Types I and II, for Grade 1; Dominion French Grammar Test, for Grades 9 and 10. In each case extensive testing programmes were carried out in Canadian schools to obtain norms, and, to determine their reliability, over 6,000 children were tested last spring. Manuals of directions are published for each test. The construction of several of these tests has been aided by grants from the Canadian Council for Educational Research. Public interest in the Department's test material is growing rapidly, and orders for over 63,000 copies were received during the school year from all parts of Canada. A collection of the published test material is being presented to the libraries of all normal schools and of university departments of education throughout Canada. Current work on new tests included the preparation and trial of preliminary material for Intermediate Reading Tests for Grades 2–6; the study and revision of the Dominion Group Achievement Test, Parts I, II, and III, for Grade 8, in the light of changes in provincial curricula in the past few years. Dr. Ferguson also made a preliminary study of existing primary intelligence tests for the Grade 1 level, and prepared items for the first trial runs of the Department's proposed Primary Test.

Two important research studies were carried on under grants from the Canadian Council for Educational Research; Dr. Jackson, assisted by Dr. Ferguson, prepared Bulletin No. 12 of the departmental series, entitled *Studies in the Reliability of Tests*, and the collection and compilation of educational statistics in Canada were extended. A first memorandum on the latter subject prepared by Dr. Jackson has been distributed to the provincial departments of education for criticism: a second memorandum, dealing particularly with financial statistics, has been prepared for similar criticism by Mr. H. W. Jamieson and Mr. G. P. Hillmer. These are intended to form a basis of obtaining uniform educational statistics throughout Canada; the project has been undertaken with the approval and support of the Dominion Bureau of Statistics.

War work has claimed the attention of several members of the Department. Dr. J. A. Long, at the request of the Canadian Legion War Services, Educational Services, prepared a series of objective tests, two forms of each, in General Mathematics, General Science, and English Reading, for use by that organization for determining the academic background for enlistment in the Air Force of those men who could not meet the formal requirements of Junior Matriculation; Dr. Jackson and Dr. Ferguson took part in the testing programmes carried out in a number of training camps under the auspices of the Canadian Psychological Association, and undertook a special statistical analysis of certain results for the Test Research Committee of that organization.

The services of members of the staff of the Department were requisitioned by other allied services; Dr. Long served on the National War Services Committee of the National Council of the Y.M.C.A. of Canada and on their National Personnel Committee, paying particular attention to a research study of the salaries and conditions of service of Y.M.C.A. secretaries; Dr. Jackson served on the Fact-Finding Committee, Recreation Project, of the Welfare Council of Toronto District.

Dr. Peter Sandiford, the Director of the Department, continued his preparation of the second volume of *Foundations of Educational Psychology*, dealing with the psychology of learning. He contributed a section on "Transfer of Training" to the *Encyclopedia of Educational Research* (American Educational Research Association) and a section on "Connectionism" to the 1941 *Yearbook* of the National Society for the Study of Education. Drs. Jackson and Ferguson prepared a *Manual of Statistics* for the use of graduate students in Pedagogy. A computation test for statistics was begun and two studies were made of the salary and tenure of Ontario secondary school teachers.

Dr. Sandiford contributed a paper on "Parents and Heredity" to the Second Annual Conference on Scientific Methods in Education organized by the Dominican Philosophical and Theological College of Ottawa; Dr. J. A. Long represented the College and the Ontario Department of Education at the Winnipeg Conference of the Canadian Association for Adult Education.

Three distinguished Chinese National students undertook graduate work in the Department of Education. Two of these completed theses for the M.A. degree; the third began work on a Ph.D. thesis.

In addition to the staff changes already mentioned, Mr. Adrian Macdonald was appointed Assistant Professor of Elementary School Subjects, Mr. E. L. Daniher lecturer in Methods in History, Miss Verna Nichol lecturer in Home Economics, Miss Margaret Faircloth reviser in the Library School, Miss Margaret Reid assistant librarian, and Messrs. A. D. Lockhart, B. C. Taylor, and L. E. Hayman instructors in the University of Toronto Schools. Miss H. L. Bryans had leave of absence for the session to gain experience in the Physical Education Department of Texas State College for Women; Mrs. D. K. Young supplied here most acceptably.

J. G. ALTHOUSE

REPORT OF THE DEAN OF THE FACULTY OF FORESTRY

In my last year's report to you I mentioned the probability of the University acquiring a forested area for the use of our students. This is now a fact. In the past our class field work has been peripatetic. This has had its advantages in acquainting the students with different forest types and conditions in various portions of the province, but these in the long run are outweighed by the inability to carry on experimental work in which progressive records are required. Our problem has been to find for this purpose a satisfactory area that was reasonably accessible and available for week-ends and other short visits. We found it at last in the Township of Sherborne in Haliburton County, about five hours by motor car from the University. It is on route 5, approximately five miles south of Dorset.

The University acquired approximately three thousand acres and the Ontario Department of Lands and Forests very generously dedicated an equal area of adjacent Crown lands to the use of the Faculty, so that the forestry school now has for its permanent use about six thousand acres of typical central Ontario forest land consisting of pure stands of white pine and of hardwoods and mixed stands of these species, all of various ages. On this tract the students will learn by actual practice how to do many of the things they will be required to do by their employers; also by observation and experimentation to learn the fundamental laws of tree growth in the forest itself and finally to determine how these laws can be modified and directed to meet the economic needs of the forest owners.

The acquisition of a university forest for demonstrational and experimental purposes is sure to become an outstanding landmark in the history of the Faculty of Forestry. It will serve as a great outdoor laboratory for the students where their experiments will stand as permanent records. Because trees grow their results will be accumulative, becoming more pronounced and of greater value each year. With the continued interest and co-operation of the Department of Lands and Forests the public also can reasonably look forward to the ultimate restoration of a representative tract of Crown land, even brought to a higher production of wood materials than the original forest.

The other matter to which I called your attention in my report of last year, namely the establishment of a course of twenty-five lectures on the natural resources of the Dominion and their conservation, has met with some opposition probably due to a misunderstanding of its objects and methods of presentation. However, this can be ironed out and since the matter is so important I hope the desirability of the course will continue to be discussed until it is finally established.

During the past few years three graduates have received the recently established degree of Master of the Science of Forestry. Going back over a longer period, we find that five others have received a Master of Arts degree and five a Doctorate from this University. Eleven graduates have received a

Master's degree and four a Doctor's degree from other universities. In addition to these, two graduates have received the Faculty's degree of Forest Engineer. These thirty men in addition to carrying on their professional duties have made outstanding contributions, directly or indirectly, to the advancement of forestry. Too many of these men, however, had to go to other institutions because we could not aid them financially. In the past graduate students have been subsidized, in effect at least, by the government or the pulp and paper industry. But these sources are too uncertain because of changing political or economic conditions to be satisfactory. We need fellowships and when conditions become normal again energetic measures should be taken to obtain them.

Owing to the effects of a chain of rather unusual circumstances the 1941 graduating class was the smallest in twenty-one years, consisting of three men. They have been employed by the Spruce Falls Power and Paper Company. Among the thirty-eight undergraduates, twenty-eight are employed for the summer by pulp and paper companies, six by the Ontario Forestry Branch, and four are in work not directly concerned with the forest. The demand for both graduates and undergraduates has been greater than we could supply.

It is a pleasure to record the response of the forestry men to the call of country. Thirty-one forestry graduates, nine former students, and six undergraduates are in active service. Of the forty graduates and former students, fourteen are veterans of the previous war.

This is my last report to you. My thirty-three years in the University have been happy and I hope they have made some contribution to the advancement of forestry in the Dominion. You and your predecessor have always given the Faculty your unqualified support. I thank you both for your co-operation. It has made possible a new building, a school forest, and steady progress in the efficiency of our teaching.

My regret in leaving, and there is a very sincere regret, is tempered by contemplation on the fitness in temperament and training of my successor.

C. D. Howe

REPORT OF THE DEAN OF THE FACULTY OF MUSIC

During the year 1940-1 the number of students registered for the Mus.B. degree was fifty-four. Seventeen of these were registered in the first year, fourteen in the second, and twenty-three in the third. The degree of Bachelor of Music was conferred on six students. No doctorates in Music were conferred. Co-ordination between the University and the Conservatory lecture courses again enabled students in the Faculty of Music to be offered a number of extended courses of twenty-five lectures each.

The number of students registered in the Music course of the Faculty of Arts was twenty-seven. Seven of these were registered in the first year, seven in the second, eight in the third, and five in the fourth. Lectures and tutorial classes in the course have been given by Professor Healey Willan and Professor Leo Smith. The course appears to be working satisfactorily on the lines originally planned. Four students completed the course this year. The great improvement in the teaching of Music in the schools of late years and the adequate supply of teachers for this purpose will in future years mean a continuously greater discrimination in their selection, and students who have completed this very thorough course will find themselves particularly well equipped.

Eight organ recitals were given in Convocation Hall—six by Professor Willan, University Organist, and one each by George Coutts, and Eugene Hill.

In spite of war conditions and the demands made upon the time of male students in connection with military training, the majority of musical activities at Hart House have been carried on as usual, with little or no diminution of interest or of attendance. The Hart House Glee Club, under the direction of Dr. Charles Peaker, has become a well-established, admirable organization.

The University Orchestra, under Mr. Godfrey Ridout, gave a concert in Convocation Hall on February 27.

Carillon recitals given by Mr. J. L. Richardson in the Memorial Tower have attracted large numbers in the milder weather and have formed also an enjoyable feature of various open air University functions.

The Beethoven Cycle, given last year by the Hart House String Quartet, was repeated in May of this year with great success.

The Conservatory Choir gave its annual performance of Bach's "St. Matthew Passion" on April 8 in Convocation Hall; the hall was filled to capacity, all seats having been sold a week in advance. On January 21, the Choir was associated with the Toronto Symphony Orchestra in performances of "Dona Nobis Pacem" (Vaughan Williams), and "England" (Ernest MacMillan).

The Conservatory Orchestra, conducted by Mr. Ettore Mazzoleni, gave an admirable programme in Convocation Hall on February 25. The chief work on the programme was César Franck's D Minor Symphony. The orchestra also appeared with great success in Massey Hall at the annual closing concert of the Conservatory on May 13; the chief work was Tschaikovski's Fifth Symphony.

The Conservatory String Quartet has given three fine programmes, one with the co-operation of Miss Kathleen Parlow, violinist, and one with the assistance of Hermine Keller, pianist, Kathleen Busby, soprano, and Myrtle Bruce Brown, contralto. The Chamber Music Club of the Conservatory has also had a most successful season.

A new Conservatory String Orchestra has been formed under the direction of Mr. Harold Sumberg, and played with success at the Conservatory Closing Concert in Massey Hall on April 22. The Junior Orchestra of the Conservatory, conducted by Miss Lina Adamson, gave its annual concert on May 20.

As usual, a very large number of students' concerts have been given at the Conservatory throughout the season and the special concert given by children's choirs composed of students from various branches and mentioned in my report last year, seems now to be an annual feature. This took place this year on June 6.

In addition to the usual two closing concerts given during the summer term, in Massey Hall, two special closing concerts for pupils at the Conservatory branches were given at the Conservatory on May 27 and 29.

Among new works by members of the University Faculty, given their first performance this year, are "Elegy" by Professor Smith, played by the Toronto Symphony Orchestra in Massey Hall on February 4, and "The Trumpet Calls" by Professor Willan, sung by the Mendelssohn Choir with the Toronto Symphony Orchestra accompanying, on April 21.

The annual Summer School has been planned by the Conservatory to be held during the month of July. A number of interesting courses covering, in particular, teaching methods, will be given by members of the Faculty, and a series of special lecture recitals covering piano repertory will be given by Jean Dansereau, French-Canadian pianist.

At the end of May registration for tuition at the Conservatory of Music was 4,654; the number of candidates for examinations for the present season was 12,495.

ERNEST MACMILLAN

REPORT OF THE DEAN OF THE SCHOOL OF GRADUATE STUDIES

The number of students registered in the School of Graduate Studies for the year 1940-1 was 490. The number of men students (385) shows a decrease of 34 as compared with the previous year, while the number of women students (105) is only 4 less than in the year 1939-40. These figures may be taken to indicate the effects of the war on University enrolment. The number registered for the Ph.D. degree was 144, an increase of 4. The number of candidates for the M.A. this year was 142, a decrease of 44. The number of students enrolled as graduate students not proceeding to a degree rose from 104 last year to 121 in the current year. There were no significant variations in the enrolment for other degrees.

The number of students who obtained the Ph.D. degree in the course of the year was 34, an increase of 5. The number of those who received the M.A. degree declined from 110 to 72, a decrease of 38. As candidates for the M.A. degree would in most cases be recent graduates, this difference probably reflects the influence of the present exceptional conditions in both military and occupational demands.

The number of students resident in Toronto was 207: the number from the Province of Ontario (excluding Toronto) was 116. (For detailed distribution see the Report of the Registrar.) The total number from the Province of Ontario was 323. The numbers from other provinces were British Columbia 21, Manitoba 20, New Brunswick 17, Saskatchewan 16, Alberta 10, Nova Scotia 9, Quebec 6, Prince Edward Island 1. The number from the United States was 34 and from all other sources 33.

The students in the School of Graduate Studies were drawn from 17 Canadian universities, 24 institutions in the United States, 6 British universities (including 2 in India), and 12 classified as foreign. Among the foreign universities are included 10 located in China, from which 19 students came to study in Toronto under the terms of the Boxer Indemnity Fund. The enrolment from universities in Ontario was as follows: Toronto 260, Queen's 23, Western Ontario 22, McMaster 18.

The distribution of the candidates enrolled for the different degrees was as follows:

	Men	Women	Total
Candidates for Degree of Ph.D.	112	32	144
Candidates for Degree of M.A.	105	37	142
Candidates for Degree of M.Com	1	..	1
Candidates for Degree of M.S.	3	..	3
Candidates for Degree of M.A.Sc	14	..	14
Candidates for Degree of Civil Engineer	2	..	2
Candidates for Degree of Mining Engineer	1	..	1
Candidates for Degree of D.Paed	32	..	32
Candidates for Degree of M.Sc.F	1	..	1
Candidates for Degree of Mus.Doc	1	1	2
Candidates for Degree of M.Sc.(Dent.)	2	..	2
Candidates for Degree of M.S.A	22	..	22
Candidates for Degree of D.V.Sc	2	..	2
Candidates for Degree of M.V.Sc	1	..	1
Graduate students	86	35	121
	385	105	490

The distribution of the candidates according to the major subject was: Anatomy 4, Anthropology 3, Applied Mathematics 6, Biochemistry 15, Biology 29, Botany 15, Chemistry 45, Chemical Engineering 5, Chinese Archaeology 1, Classics 11, Dentistry 2, Educational Theory 6, Electrical Engineering 5, English 38, Fine Art 2, Food Chemistry 2, Forestry 1, Geography 6, Geology and Palaeontology 20, Germanic Languages 5, History 20, Household Science 4, Hygiene and Preventive Medicine 6, Law 6, Mathematics 8, Mechanical Engineering 3, Metallurgical Engineering 2, Mineralogy 5, Mining Engineering 2, Music 2, Pathology and Bacteriology 1, Pathological Chemistry 3, Pedagogy 32, Pharmacology 4, Philosophy 49, Physics 21, Physiology 5, Physiological Hygiene 1, Political Science 32, Preventive Dentistry 1, Professional Degrees 3, Psychology 19, Romance Languages 18, Semitic Languages 8, Surgery 3, Veterinary Science 3, Special Committees 8.

The number of students recommended for degrees was:

Ph.D.	34
M.A.	72
M.A.Sc.	8
M.S.	1
C.E.	1
M.E.	1
D.Paed	1
M.Sc.F.	1
M.S.A.	5
M.Sc.(Dent.)	1

Fellowships

The fellowships and scholarships awarded by the Council of the School are given below. This list does not include the awards made directly by the Faculty of Medicine, College Councils, or other independent committees of award:

Open Fellowships: Miss V. Facey, B.Sc. Dalhousie, M.A. Toronto, Department of Botany; E. Sirluck, B.A. Manitoba, M.A. Toronto, Department of English.

Alexander Mackenzie Research Fellowships: W. F. Ryan, B.A. New Brunswick, Department of History; H. C. McFadden, B.A. Manitoba, Department of Political Science.

Ramsay Wright Fellowship: Miss F. H. Armstrong, M.Sc. Dalhousie, Department of Zoology.

Reuben Wells Leonard Fellowships: M. H. M. MacKinnon, M.A. Toronto, Department of English; W. L. Grant, B.A. British Columbia, M.A. Harvard, Department of Classics; H. Lew, B.A. British Columbia, Department of Physics; R. F. Schnell, B.A. Saskatchewan, M.A. Toronto, Department of Semitics; Miss A. M. Wright, B.A. Toronto, M.A. Queen's, Department of History; V. E. F. Solman, M.A. Toronto, Department of Zoology.

Special Flavelle Fellowships: B. Noonan, B.A. Manitoba, Department of Mathematics; Miss G. V. Downes, M.A. British Columbia, Department of Romance Languages.

Nipissing Mining Company Research Fellowship: J. K. MacFarlane, B.A.Sc.

David Dunlap Memorial Research Fellowship: Miss M. D. Salter, Ph.D.

John Northway Fellowship in Psychology: Miss L. E. Neal, M.A. Western Ontario.

Inco Scholarship: H. S. Scott, B.A.Sc.

Staff appointments with reduction of fees: 144.

The number of scholarships and fellowships available for students intending to pursue graduate work has been increased during the past year. The International Nickel Company of Canada has established a Fellowship of the annual value of $500 for students in the Faculty of Applied Science; Canadian Industries, Limited, has given a Fellowship of the value of $750 for research in Chemistry; the John Northway Memorial Fellowship of the value of $500 has been given for research under the direction of the Department of Psychology.

It is universally recognized that a graduate school must have resources which will enable it to assist students who have adequate ability but might otherwise be prevented from undertaking advanced work. Though the number of fellowships has been steadily increasing, the available funds still fall very much below the amount needed.

The Dean attended the meeting of the Association of American Universities at Washington in November, 1940. On this occasion the Association accepted the invitation of the University of Toronto and announced that the meeting would be held at Toronto in 1942.

G. S. Brett

REPORT OF THE DEAN OF THE FACULTY OF DENTISTRY

The complete attendance this year was 249 students which was an increase of six over the previous year, and this in spite of the fact that the war prevented any coming from Australia or England. We missed the graduates from overseas as they always exerted a broadening influence on the class. There are, however, two students from India, one in the fourth year and one proceeding to the degree of Bachelor of Science in Dentistry.

Forty-five students were admitted to the degree of Doctor of Dental Surgery and of these twenty-three enlisted in the Canadian Dental Corps. Because of the need for dentists for the military forces and on the request of the officer commanding the Canadian Dental Corps, the majority of these men were permitted, after adequate tests, to report for military duty about the middle of April. The dental officer commanding Military District No. 2 gave leave of absence to these officers under his command to attend Convocation on June 5. They made an impressive showing in the uniforms of men enlisted for duty wherever needed, either in Canada or overseas.

Four graduates were proceeding to the degree of B.Sc.(Dent.) and three occasional students attended during the past session.

In the course in Dental Nursing, seventeen young women were enrolled and all received the diploma. I am pleased to report that the majority of these graduates are already in positions.

Two of our dental graduates were enrolled in the School of Graduate Studies. Dr. R. Gordon Agnew was awarded the degree of Doctor of Philosophy, his thesis being entitled: "Various Ethnic Groups of West China and Eastern Tibet; Their Environment, with Special Reference to Dental, Oral and Dietary Conditions." Dr. T. N. Scott was admitted to the degree of Master of Science in Dentistry, submitting a thesis on: "A Study of the Anatomy and Histology of the Semi-Edentulous and Edentulous Mouth."

Since last October six practising dentists, including one from Kansas City, Missouri, have taken refresher and post-graduate courses. These courses varied from one week to two months' duration and the teachers in the Departments of Diagnosis, Radiography, Periodontology, Prosthodontia, and Dental Surgery gave special instruction.

Students of all years have taken a keen interest in military matters and have shown the heartiest co-operation with the commanding officer of the Canadian Officers' Training Corps. Sixty-seven dental students completed their military training Part I in the C.O.T.C., and by graduating in Dentistry, which is the military requirement for Part II, they became or will become eligible for appointment as officers in the Canadian Dental Corps. Seventy-seven students, mostly of the earlier years, were members of the Training Centre Battalion.

Most of the members of the fourth-year class have taken advantage of the opportunity for two weeks' military training at Niagara Camp although this was obligatory for only three students under government regulations. In view of this, the Infirmary was closed for patients three weeks earlier than usual. This will mean that more students of the fourth year will be returning early in September to meet the summer clinical requirements.

Last fall arrangements were made through the Medical Officer of the Royal Norwegian Air Force to give dental service in the Faculty Infirmary to the members of that corps stationed in Toronto. Dental treatment was also made available to English evacuees who were under the supervision of the International Business Machines Company. The Kiwanis Club arranged to have dental service given to about seventy boys of the "K" Clubs of Toronto in the Departments of Preventive and Clinical Dentistry.

Although no regular course is conducted by this Faculty to train dental technicians, still, at the request of the military authorities at Ottawa, arrangements were made for a six months' course for the training of Dental Technicians for the Canadian Dental Corps, to be held in the Dental Building. Fifty-eight enlisted men are registered and nearly all of them have educational qualifications which would permit them to enrol in the regular course in Dentistry after their discharge from the Dental Corps, should they so desire. The course is under the direct supervision of Dr. R. J. Godfrey who is assisted by members of the teaching staff and some dentists from private practice who have been appointed as teachers.

The federal government made it possible for Dr. Cavanagh of the Faculty to travel to the Arctic on the S.S. *Nascopie* during the summer months of 1940. He made a study of the dental conditions of the natives at various points in Labrador, Ellis Island, and Greenland, as well as giving dental service to the government employees and the natives.

Only one change has occurred in the personnel of the staff this year. Dr. E. A. Grant, Director of Dental Services for the City of Toronto, was appointed Associate in Dentistry and gave lectures to senior students and to students in Dental Nursing on Public Health Dental Service. Dr. S. M. Richardson was promoted to the rank of Associate Professor in Radiography, while Doctors Cavanagh and J. H. G. Harwood were promoted to Associates in Dentistry.

The meeting of the American Association of Dental Schools was held this year at St. Louis at the usual time, from March 17, and Dr. L. F. Krueger accompanied me. Attendance at this meeting is of great value to the members of our staff and it is unfortunate that more of them are not able to be present.

A. D. A. MASON

REPORT OF THE DIRECTOR OF THE DEPARTMENT OF PHYSICAL AND HEALTH EDUCATION

New ground was broken in the field of university education when a course in Physical and Health Education for both men and women students was established last spring, under the supervision of a Senate's Standing Committee.

Physical Education courses have been in operation in many universities and colleges, their curriculum consisting of Physical Education and a group of courses in Arts and Science subjects. The combination with Physical Education of a comprehensive course in Health Education, in place of Arts and Science courses, has not previously been attempted at the university level. The graduates of this three-year course, leading to the degree of Bachelor of Physical and Health Education (B.P.H.E.), will be provided with a sound scientific knowledge of the structures, functions, and personality of the well person; of the methods of assessing the degree of health in the well person and the means by which a good grade of health may be maintained and a poor standard of health brought to a better one through the application of a knowledge of physical education, of nutritional science, and of the adjustment of personality to its many environments. They will also learn how a person's health can be preserved by the prevention of accidents and diseases. Education departments of governments have placed Health at the top of the list of the objectives of education in the schools under their jurisdiction, but they have had difficulty in accomplishing their purpose because of their inability to secure instructors who are qualified to provide the pupils with a scientific knowledge of health, especially in the higher grades of the secondary schools.

This course has been designed to prepare, in a university, graduates who can teach both Health Education and Physical Education with the same efficiency as the Specialist teachers now teach Science or Languages or Mathematics. Graduates with this degree will be admitted to the High School Assistants' and Specialist courses in the Ontario College of Education and thereby become qualified for appointment as Specialist Teachers in the secondary schools of the country. Those not desiring to enter the teaching profession will be eligible for positions in Young Men's or Young Women's Christian Association work, in playgrounds or camp organizations, and in large industrial and commercial companies.

The first year of this new course began in September, 1940, with an enrolment of seventeen students, of whom six were men and eleven were women, a fair number considering that most students had left school before the course was announced in the summer. No women students were registered in the first year of the diploma course in Physical Education for Women, as it was decided the new course would take its place in the future. The other years of the diploma course were continued, there being seven students in the second year, eleven in the third year, and five in the fourth year.

The suggestion to establish a course in Physical Education for Men in the University by Mr. W. A. Stevens initiated the steps which finally resulted in the establishment of the new course. Men in Ontario, desiring to qualify as Physical Directors for the schools, have been compelled to go to institutions in the United States for courses in Physical Education, so the provision of a course in this University was thought by him to be desirable. Excellent facilities are available for men students to obtain knowledge and experience in this part of the course, including the Athletic Wing of Hart House, the Stadium, the Arena, and the various playing fields on the campus. The staff of instructors are all of high standing in their respective branches of physical activity. For the coming session, the instructional staff for men is being strengthened by the appointment of Mr. M. G. Griffiths who has been Physical Director at St. Andrew's College for the last ten years.

At the close of the session, arrangements were made whereby the Margaret Eaton School would be merged with the Department of Physical and Health Education. This School has gained a praiseworthy reputation for training women students in courses of study in Health, Physical Education, and Recreation, leading women Physical Directors in many schools having received its diploma. The large well-equipped gymnasium, swimming pool, dancing studio, lecture and social rooms in the School's building at the corner of Yonge and McGill Streets will greatly increase the facilities for physical activities for women students in the University, until the time comes when a new Women's Athletic Building is built. The addition of Miss F. A. Somers, Director, Miss D. N. R. Jackson, and other members of the staff of the School to positions in this Department of the University will enable more effective instruction in Physical Education to be given to the women students in the University.

E. S. Ryerson

REPORT OF THE ACTING DIRECTOR OF THE DEPARTMENT OF SOCIAL SCIENCE

In these hazardous days social workers have an important part to play in home defence. In the period of war's aftermath the need for their services will be intensified. Registration figures, therefore, assume special importance. During the past session these increased, the Department enrolling sixty-nine full-time students and twenty-three occasionals, but the increase in the demand for trained personnel will exceed the supply.

One answer to this problem of adequate registration is to be found in scholarships. Social work now requires five or six years of university preparation and it pays very modest salaries. It is therefore gratifying to be able to report the establishment of three additional scholarships during the past session. These are the M. M. Cohen Scholarship, to be awarded by the Senate of the University to a male student entering second year with the intention of specializing in group work, and the Joseph J. Murphy and Mary E. Kernahan Scholarships to be awarded to Catholic students registering for the two-year diploma course. The Murphy and Kernahan Scholarships are in the gift of the Catholic Children's Aid Society of Toronto.

An outstanding event of the year and of the graduation ceremonies was President Cody's announcement of Dr. S. K. Jaffary's appointment as Director of the Department. A Canadian graduate of the universities of Alberta and Chicago, and widely experienced in the teaching and practice of social work, Dr. Jaffary's appointment as Director is warmly received by those who know and appreciate his work in the University and in the community.

Toward the end of the session the Senate of the University approved a change in the name of the Department. Henceforth it will be known as "The School of Social Work." This will clarify its relationship to the various departments upon which it depends for teaching in the social sciences, and will bring it into line with the best schools on this continent, which now consider the social sciences and social philosophy to be a basic part of preparation for social work. The Senate has also approved the setting up of a Faculty Council for the School. The members of this body will be appointed by the President from those who direct or give instruction and its existence will strengthen and facilitate planning and development.

This report must record loss as well as gain. Early in the session Professor E. J. Urwick left Toronto to make his home in British Columbia. Since 1927 he served the Department with generous devotion. Under his guidance it attained graduate status, a more assured place in the University, and a closer alliance with the course in Sociology which he helped to establish. But more important than these and other contributions was the gift of himself to those who came seeking help or advice. Those who were his students and his colleagues miss the daily inspiration of his personal presence, but to have known it is to feel each day's task a challenge.

The Department is deeply indebted to the President of the University for interest and counsel through two years of reorganization and also to the Departments of Political Economy, Philosophy and Psychology, and University Extension. This period has given fresh evidence of the meaning and value of the School's university affiliation, and as always before, social agencies and workers in the community have given generously of their time and thought. The School faces a new chapter in its history grateful for these strengths of the past and of the present, and in a spirit which says in effect—where we stand today is important, but where we are moving is more important still.

AGNES C. MCGREGOR

REPORT OF THE DIRECTOR OF THE SCHOOL OF NURSING

During the session 1940-1, the second year of war, this School has maintained its usual work with no loss in numbers, and only a moderate degree of outward change in general conditions. Under the surface, however, modification, and adaptation to new conditions, go on continually. Part of this adaptation lies in acceptance of the fact that all hope of getting suitable accommodation for the School must be put aside indefinitely, although the Alumnae Association, in a quiet unobtrusive fashion, keeps the need before all and has added something to its fund even in this past year.

War lays unusual demands upon nursing and upon hospitals, and because of this the nursing schools of our country are facing peculiar problems. With the exception of this one School in the University of Toronto, the Canadian nursing schools that give undergraduate training are "hospital schools," that is they have neither financial nor administrative independence as educational institutions. Hence it is now more important than ever that this one independent School should use all of its opportunity to strengthen others as they seek the same independence.

Added to the regular work of the School, the members of staff have been drawn into a variety of war activities, with both voluntary and professional associations, in connection with nursing overseas and also in the civilian defence schemes at home. In April one member of the teaching staff, Miss Dorothy Percy, signed up for active service and is now stationed at Camp Borden Military Hospital with the early prospect of going overseas.

In spite of all the present obstacles to travel, a number of students and visitors from other countries have come to us during the past year. Included in the small classes which are taking the General course in Nursing are young women from Brazil, Portugal, and the United States. To these a candidate from India has just been added. Among the graduate nurses have been representatives from Panama, the United States, Brazil, the Phillipine Islands, Fiji, and Japan. Medical officers have come as visitors from Chile, Fiji, India, Rhodesia, Portugal, and various places in the United States and Canada.

Once more in the concluding days of an academic year we have had to say farewell to one who must be counted among the founders of this School, namely, Miss Jean Gunn who up to the time of her death, in this last week of June, 1941, was Superintendent of Nursing, and of the Nursing School, at the Toronto General Hospital. A great friend of nurses and of nursing, and a leader in professional work in Canada for the past twenty-five years, Miss Gunn proved a strong ally all through the organization of this School and of its predecessor, the former Department of Public Health Nursing. From the beginning she has given counsel, opportunity, hospitality, all in turn and all in great measure. She will be greatly missed. It is not possible to pay a fitting tribute in words alone: we can do this best by loyal effort to build worthily on the foundations which she helped to lay.

The enrolment of students for the past year has been as follows:

General course in Nursing	53
Graduate nurses in certificate courses	78
Occasional students	170
Enrolment in refresher courses	268
	569

E. KATHLEEN RUSSELL

REPORT OF THE DIRECTOR OF THE SCHOOL OF HYGIENE

In last year's report, reference was made to the expansion of the facilities of the School of Hygiene for the training of public health personnel through the provision of a field-training centre. This development was made possible through the support of the International Health Division of the Rockefeller Foundation and the Ontario Department of Health. Following preliminary studies of the existing public health facilities of the municipality of East York adjoining the city of Toronto, a plan of co-operation was consummated in December, 1940, between this municipality and the University of Toronto. The School of Hygiene provided the services of the medical officer of health and the supervisor of public health nurses as well as part-time services of an assistant medical officer of health and the municipality undertook a programme of development of the health services which would assure to the municipality a department adequate for its needs.

The present population of East York is 40,000. In making these plans, the School of Hygiene desired to have for purposes of demonstration to medical officers of health, public health nurses, and other persons engaged in public health work a health department serving a much smaller population than the city of Toronto. For some twenty years, students of the University of Toronto have had the privilege of studying the excellent organization of the Department of Health of the city of Toronto, and the facilities generously extended have been of the utmost importance in the development of public health teaching. The use of the East York Health Department is intended to supplement the splendid facilities afforded by the Department of Health of the city of Toronto. The

Department will serve as a demonstration centre of public health practices as conducted in a small urban municipality. In addition, it is purposed to conduct studies in nutrition and to make observations concerning the use of the several specific measures of protection the value of which has been established in such diseases as smallpox, diphtheria, scarlet fever, and whooping cough.

Dr. William Mosley, who has been appointed medical officer of health of East York, will be responsible for the development of the teaching of public health administration in the School of Hygiene. In this way, Dr. Mosley will bring to his teaching practical experience as public health administrator of a municipality comparable in size to the majority of cities in Canada.

The development of this plan of participation in the East York Health Department marks a very distinct advance in the development of the School of Hygiene. The need for such a demonstration centre and field for special studies has been recognized for some years and much study had been given to the problems which were presented. It is very gratifying to record that the Council of the municipality is most appreciative of the steps which have been taken and the development is proceeding much more quickly than was considered possible. The need for an assistant medical officer became evident within a few months of the formal announcement of the work and this office was temporarily filled by Dr. D. B. Avison, D.P.H., who resigned to accept an appointment with the Department of Pensions and National Health. Dr. Avison was succeeded by Dr. J. H. Baillie, D.P.H.

Plans were made during the year for the organization of two new subdepartments and these were approved at the close of the year. In the Department of Epidemiology and Biometrics, a Sub-department of Public Health Administration was established under the direction of Dr. William Mosley. The organization of this Sub-department was essentially related to the development of the work in East York. In the Department of Physiological Hygiene, a Sub-department of Nutrition was established under the direction of Dr. E. W. McHenry. The establishing of a Sub-department of Nutrition reflects the increasing importance of the subject of nutrition. Under Dr. McHenry's direction, studies have been conducted for the Department of Pensions and National Health and grants have been received from the International Health Division of the Rockefeller Foundation. During this year, the Division of Natural Sciences of the Rockefeller Foundation also made a grant for certain fundamental studies to be conducted by Dr. McHenry. These grants for work being conducted in the School of Hygiene, together with the participation of the Rockefeller Foundation, through the International Health Division, and the Department of Health of Ontario in the East York demonstration centre, afford further evidence of the important position which the School of Hygiene occupies in Canada in the field of public health.

The appointment of Dr. C. H. Best, Professor of Physiology, as Sir Frederick Banting's successor in the Banting and Best Department of Medical Research necessitated him relinquishing the direction of the Department of Physiological Hygiene. His resignation constitutes a serious loss to the School of Hygiene. Dr. Donald Solandt, Associate Professor of Physiology, has been appointed Acting Head of the Department, thus continuing the very intimate relationship between the Departments of Physiology and Physiological Hygiene.

The number of students receiving instruction in the departments of the School of Hygiene during this session was as follows:

A. *Graduates*	
Candidates for diploma in Public Health	27
Candidates for degree of Ph.D	4
Candidates for degree of M.A	2
Candidates for degree of M.S.A	2
Occasional students	4
B. *School of Nursing*	75

C. *Undergraduates*

Faculty of Medicine, fifth year	116
Faculty of Household Science, second and third years	35
Faculty of Arts, second, third, and fourth years	98
Second-year Pharmacy	93
Physical Education for Women	5
	461

The enrolment in the course leading to the diploma in Public Health was the largest in the history of the School. Ten of the candidates were from the Province of Quebec, two from British Columbia, four from Alberta, two from Manitoba, six from Ontario, one from New Brunswick, one from the British West Indies, and one from China. Including the candidates of this year, the total number who have received the diploma since 1911 is 242. As the great majority of these physicians are in public health work in Canada, the significance of this contribution to the advancement of public health cannot be over-estimated. In addition, the School of Hygiene has co-operated in the training of many hundreds of public health nurses. The introduction two years ago of advanced training in public health engineering provided for the first time such facilities in Canada. It is expected that a small group of public health engineers will receive training each year as there is a very urgent need for engineers with such training.

The establishing of regulations pertaining to the qualifications of medical officers of health and other public health personnel by the Department of Health of Ontario led to the provision of special courses for part-time health officers. Reference was made in last year's report to the first of these courses. Owing to the inability of physicians to obtain *locum tenens* due to the enlistment of so many medical officers in the armed forces, instruction for part-time health officers has been provided by a correspondence course extending over a period of ten weeks. One week's attendance at the School of Hygiene is required. The provision of this correspondence course has met temporarily the needs but must be considered only as a war-time provision.

Arrangement of the courses of instruction into four terms each of two months, which was inaugurated last year, has proved successful and should be of assistance in the training of medical officers of health who cannot be absent from their duties for the academic session.

In each of the Departments of the School of Hygiene, studies and investigations have been conducted during the year. In the report of the Department of Hygiene and Preventive Medicine, Dr. Donald T. Fraser has outlined to the Dean of the Faculty of Medicine the studies in that Department. To avoid repetition, the studies in the Department of Physiological Hygiene and in the Department of Epidemiology and Biometrics, which are conducted by members serving also in the Connaught Laboratories, are included in the report of the Director of the Connaught Laboratories since grants-in-aid are made by the Connaught Laboratories for the support of certain of these studies.

R. D. DEFRIES

REPORT OF THE DIRECTOR OF UNIVERSITY EXTENSION AND PUBLICITY

During the session 1940-1 every new proposal has been evaluated by the yardstick of the magnitude of its contribution toward the winning of the war. The first enterprise to be described in this report is one which may not strictly be classified as a phase of University Extension, one which has cost the University nothing in money. A year ago the Canadian Legion made the request that the University of Toronto, through its Department of University Extension, should take charge of the education of the troops in Military District No. 2. In each Military District in the Dominion the Canadian Legion undertook to utilize the facilities of a university. The Legion provided, in each case, whatever clerical assistance might be required and provided the necessary supplies. In Ottawa, Canadian Legion War Services, Inc., set up an educational office manned by inspectors, officials, and teachers selected chiefly from the ranks of veterans of the War of 1914-18. Correspondence courses, academic and vocational, were prepared and were published in mimeographed text-booklets. Of this educational system the first objective was to make more competent sailors, soldiers, and airmen; the second, to prepare the men for rehabilitation in civil life after the war; the third, to provide useful and profitable occupation for leisure time.

The Director of this Department was authorized to select an educational organizer, a veteran of the previous war, to visit the camps in this Military District and to interest the men in the correspondence courses. This organizer has done his work well. Of course, Military District No. 2 is one of the largest in the Dominion and it was to be expected that the number of applications sent to Ottawa would be large. Over 5,000 of these applications have been sent on, more than have been obtained in any other District. Some men asked for courses for which their educational background had obviously not prepared them; others made fantastic requests for courses which could not possibly be taught by correspondence. In each case a personal letter was written to the man, pointing out why he should not ask for such a course and suggesting one which would be more useful and more practicable. Never was a man told that there was no course for him. And how appreciative were the replies received! Many men seemed surprised to find that there was someone who was taking a special personal interest in their educational problems.

But these correspondence courses stop at the end of what used to be termed Junior Matriculation or Middle School and it was found that there were many men who had obtained that standing and who were qualified to study subjects of Honour Matriculation, Upper School, or Grade XIII (Ontario) as well as others who could claim the right of admission to an Arts course. This Department has for years carried on correspondence courses in Upper School subjects and these were made available, without cost, to those members of His Majesty's Forces, in Military Districts Nos. 1 and 2, who were qualified to take them. Men with the required academic standing were enrolled in the Pass course for Teachers and were allowed to do all their work by correspondence, the fee being set at $3 per subject (registration, $1; examination, $2). The necessary regulations were made by the Committees concerned and were recommended to the Senate or to the Board of Governors of the University, as ordinary procedure requires. Members of the staff of the University undertook to mark the answer-papers without remuneration, as a war service, and the Ontario Department of Education agreed to issue certificates on the recommendation of the correspondence instructors, submitted by the Registrar of the University. Over in England, a good many Canadian soldiers and airmen are studying Grade XIII subjects and Arts subjects by correspondence and, though there are delays in transmission, that work is progressing. In a very few camps in M.D. 2 a few illiterates (though how there can be illiterates in Ontario is a mystery) are being provided with the most elementary instruction. At Exhibition Camp, Toronto, members of the University's staff in Mathematics are teaching, with the assistance of secondary school-teachers, large classes of airmen who need, for the work in which they are engaged, a better knowledge of Mathematics than they now possess. At Camp Borden, there is a class in shorthand and typewriting, taught voluntarily by a corporal who, in civil life, is a teacher of commercial subjects. The whole system is so well organized and at the same time is so elastic that no officer or enlisted man in any of the Services can say or think that there is no course for him.

Last November a delegation of R.C.A.F. recruiting officers came to me to discuss an educational problem. Young men of fine calibre were coming to the recruiting offices, they said, determined to be pilots or observers—but they lacked the academic qualifications. If they could be brought up to approximately Middle School or Grade XII standing in Algebra, Geometry, Physics, and English, the R.C.A.F. would accept them for training as air-crew personnel. But these young men must continue at their daily work until their courses were completed. They had been two years or three years, or perhaps a little more, in attendance at a secondary school but had left school, greatly to their present dismay at their own foolishness, before they had obtained the necessary diploma or certificate. A twelve-weeks' course, three nights a week, was decided upon —and the work began. Members of the staff of the University and of the staffs of the Toronto Collegiate Institutes were asked to do the teaching, without remuneration, and they promptly responded. Never, say these teachers, have they had pupils who worked more diligently than do these boys. They have an immediate and a definite objective. Each month a new class (of from forty to eighty) commences work and each month examinations are held for a class that has been twelve weeks at work. Business men and engineers, anxious to have a share in this work, have joined the ranks of the volunteer teachers. At the end of June, from these classes which commenced in November, 126 young men have been "cleared" for air-crew training. Besides, classes in Mathematics have been held twice a week for R.C.A.F. men who are doing duty in the Security Guard. The large night school, made up of classes of both kinds, is carried on in the building of the University of Toronto Schools. The teachers who give their evenings, cheerfully and efficiently to this task, without any thought of remuneration, are making a real contribution, it will be agreed, to the prosecution of the war. Incidental expenses are paid by Canadian Legion War Services, Inc.

The Pass course for Teachers, in which instruction is given in the summer session and in Teachers' classes (held in the evenings and on Saturdays during the winter session) has assumed the proportions of an Arts College, graduating, each year, forty or more men and women with the degree of Bachelor of Arts. In this course the number of students was 570.

In the two-year diploma course in Occupational Therapy there was an enrolment of 61 in the first year and 36 in the second year. The enrolment in Physiotherapy was 43 in the first year and 33 in the second year. Eight graduates of the former and seven graduates of the latter, all of them women who completed their courses in recent years, are now serving in Britain.

In the two-year diploma course in Aerial Navigation there were 32 men in the first year and 17 in the second year. Enlistments reduced these numbers somewhat during the session. The graduates are all engaged in some form of war service—many of them as instructors in the R.C.A.F. or in the Elementary Flying Training Schools.

New though the certificate course in Business is, it is already flourishing and is filling a definite need. Perhaps it is the beginning of a School of Administration of the future. Fifty-four men and women were enrolled; 41 wrote and passed their examinations. All instruction is provided in the evenings and the instructors say that the students are earnest and industrious.

The total number of adults enrolled in evening tutorial classes during the session was 2,642, made up as follows: Accounting, 73; Advertising, 62; Aircraft Engines, 38; Art of the Theatre, 32; Cost Accounting, 39; Economics, 42; English Composition, 52; English Diction, 150; English Voice, Diction, Speech, 22; French, 85; Gymnastics, 30; Homemakers, 53; Industrial and Business Organization, 88; Interior Decorating, 57; Journalism, 76; Lip Reading, 39; Magazine Writing, 88; Chemical Mathematics, 37; Metallurgy, 54; Music Appreciation, 76; Political Geography, 71; Psychology, 142; Physics, 15; Public Speaking, 198; Salesmanship, 60; Secretarial Practice, 22; Short Story Seminar, 27; Social Science, 28; Spanish, 29; The World Today, 105; Canadian Economy and the War, 168; Marketing, 342; Accident Prevention, 232.

The course of lectures in Accident Prevention was new this year and was established on the request of, and in co-operation with, the Toronto-York

Division of the Accident Prevention Associations. The lectures were published in a mimeographed book. The course in Marketing was organized with the assistance of the Department of Political Economy and the Advertising and Sales Club and the lectures were published in the *Commerce Journal.* The Canadian Credit Institute, the International Accountants' and Executives' Corporation, and other interested organizations co-operated in making a success of the course on "The Canadian Economy and the War." Using the Department of University Extension as its machinery, the Department of Political Economy is establishing a close and intimate connection with the world of industry and business and is rendering an excellent service, on behalf of the University, to the community.

Two short courses were arranged for fire chiefs and firemen, in co-operation with the Fire Marshal of Ontario and the Dominion Fire Chiefs' Association. One of these courses was held at the University in November and the other in Timmins, in June. In the former, the enrolment was 63; in the latter, 55. The lectures were published in mimeographed form and were sold, in large numbers, not only in Ontario but to most of the firefighters' brigades in the Maritime Provinces.

This year the Extension course for Real Estate dealers and municipal officials drew an even larger attendance than in previous years, the number of students being 116. The lectures were published in a mimeographed book.

Our system of extension lectures, the oldest form of extension service, commenced in 1894, is popular even in war-time: 140 of these lectures were delivered, to audiences totalling 15,768. The cities and towns in which these lectures were given are as follows: Belleville, 5; Bowmanville, 2; Brampton, 1; Brockville, 1; Chatham, 2; Collingwood, 2; Dundalk, 1; Fingal, 1; Galt, 1; Hamilton, 10; Kitchener, 3; Lindsay, 1; London, 1; Meaford, 1; Mitchell, 1; Newmarket, 1; Niagara Falls, 2; North Bay, 1; Orillia, 1; Oro, 1; Oshawa, 1; Ottawa, 1; Owen Sound, 1; Peterborough, 1; Port Hope, 1; Preston, 1; St. Catharines, 5; Sault Ste. Marie, 1; Stamford, 1; Stratford, 1; Toronto, 84; Weston, 2; Wroxeter, 1.

The lecturers were: Professor J. G. Alford, Professor R. W. Angus, W. J. Dunlop, Dr. Mack Eastman, Lionel Gelber, Professor H. A. Innis, Professor H. R. MacCallum, J. Campbell McInnes, Professor C. R. Myers, Professor E. J. Pratt, R. G. Riddell, Professor R. M. Saunders, Professor G. Tatham, Professor T. M. C. Taylor, and Dr. A. M. Wynne.

By means of correspondence courses specifically adapted to the needs of the members of business organizations, this Department serves (*a*) the Canadian Credit Institute, 113 students; the Chartered Life Underwriters' Association, 229 students; the Certified Public Accountants' Association, 129 students; the International Accountants' and Executives' Corporation, 12 students. Arrangements have been made to serve, in the same manner, the Chartered Institute of Secretaries. The men and women, who use the correspondence course provided for the organizations mentioned, write examinations and, on completion of the courses, are awarded diplomas by the organization of which they are members.

Correspondence courses in Upper School subjects were taken by 65 teachers while 47 teachers studied the correspondence courses which lead to standing as commercial specialists.

The total number of students taking continuous courses and classes was 4,668. This does not include R.C.A.F. classes conducted for Canadian Legion Educational Services. Those who attended single extension lectures numbered 15,768. But the number served in other ways runs into uncounted thousands.

Rural adult education received a good deal of attention. Assistance was given to an experiment undertaken in the County of Simcoe and in the District of Muskoka, where the Ontario Department of Education and the Ontario Department of Agriculture co-operated in providing evening classes for farmers; to another enterprise in the County of Oxford where useful work was done in co-operation with the Ontario Federation of Agriculture; and to the folk-schools

147,247

for young farmers which were held in the County of Grey. The grant made by the University to the Canadian Association for Adult Education was divided equally between the first and the third of these educational experiments and the Carnegie Corporation of New York gave generous financial assistance to the first.

During the session the University has been given a great deal of publicity in the newspapers, magazines, and other periodicals. News items have been sent out regularly to the daily papers and to the Canadian Press. Pamphlets and bulletins have been published and have been widely distributed. New courses, and courses providing special training for war service, have been described fully in publications which have been mailed to all the secondary schools in the province. Addresses have been given, at commencement exercises and on other occasions, to the pupils in collegiate institutes and high schools; similar addresses, describing university courses, have been given to Home and School Associations. Advertising has been placed in carefully selected papers and magazines. Numerous interviews have been given to parents and to young people who have had difficulty in selecting university courses; this is a special service which is in great demand and which brings earnest expressions of gratitude. One farmer insisted on demonstrating his thanks with a pair of chickens and a quart of cream!

In University Extension and in University Publicity everything has been done which has seemed to be worth doing and to be within the scope of a University's proper activity. So ends my twenty-first report as Director of University Extension and Publicity.

W. J. Dunlop

REPORT OF THE LIBRARIAN

The number of volumes added to the Library during the year has been 12,260, and the number of pamphlets 1,642, making the total number of accessioned volumes in the Library 394,178, and the total number of pamphlets 145,191—or a grand total of 539,369.

These accessions came mainly from Great Britain, the United States, and South America, since most of the continent of Europe has been for over a year completely closed to us. A striking and significant fact is that among the heavy shipments of books sent to us from the British Isles, there have been lost through enemy action only two small parcels. One shipment of periodicals was also lost in transit, but the gaps thus created have already been filled by our English agent, E. G. Allen and Sons, whose efficient service under the unparalleled conditions in bomb-racked London commands one's deep admiration.

The following are the statistics of the use of the Library by undergraduates in comparison with previous years:

	1921-2	*1926-7*	*1938-9*	~~*1939-40*~~	*1940-1*
Reading-room books	41,928	106,485	195,869	~~188,886~~	167,145
Over-night books	18,998	39,779	102,233	~~93,387~~	86,273
Week books	4,782	13,104	21,247	~~18,722~~	20,043
Totals	65,708	159,368	319,349	~~300,995~~	273,461

~~The following is a statement showing the circulation in the Medical, Political~~ Science, University College, and Law reading-rooms during the year, in comparison with other years:

	1935-6	*1936-7*	*1938-9*	~~*1939-40*~~	*1940-1*
Medical reading-room:					
Reading-room books	11,195	12,814	12,145	~~12,949~~	13,831
Over-night books	12,219	12,425	10,755	~~8,447~~	8,965
Week books	3,622	4,188	2,941	~~2,257~~	2,714
Totals	27,036	29,427	25,841	~~23,653~~	25,510

Political Science:					
Reading-room	11,208	9,088	10,158	9,197	7,930
Over-night	6,338	4,865	5,484	4,569	4,140
Totals	17,546	13,953	15,642	13,766	12,070
University College:					
Reading-room	30,746	30,992	27,275	23,079	21,585
Over-night	16,466	15,923	12,005	9,428	9,071
Week books	.....	.....	649	675	681
Totals	47,212	46,915	39,929	33,182	31,337
Law reading-room:					
Reading-room	15,585	22,985	29,242	25,762	22,886
Over-night	4,368	4,004	4,657	3,838	4,488
Week books	524	373	442	205	372
Totals	20,477	27,362	34,321	29,805	27,746

The following is a statement showing the total circulation in the Library during recent years:

	1925-6	*1936-7*	*1938-9*	~~*1939-40*~~	*1940-1*
To undergraduates	159,278	341,086	319,349	~~300,995~~	273,461
To professors and graduates	20,000	39,437	41,439	~~42,424~~	42,359
Totals	179,278	380,523	360,788	~~343,419~~	315,820

19
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These figures, it should be explained, are exclusive of reference books, of which nearly 30,000 have been replaced on the shelves by the library assistants in the main library during the past year; and of course they take no account of the very considerable circulation of books in some of the departmental libraries.

The decline in the circulation of books among undergraduates, which has been approximately eight per cent of last year's total, is due no doubt to several causes. The first among these is the fact that compulsory Military Training was introduced this year into the University, and this reduced to some extent the time available for reading and study; the second is the fact that during the year there was a steady withdrawal of undergraduates from the University to enlist in His Majesty's armed forces, or to take part in war industries; and a third cause of the decline in circulation is that the examinations were held this year earlier than usual, so that in some faculties the period preceding the examinations, when the circulation of books is heaviest, was reduced by several weeks, and in the case of no faculty by less than one week.

There has been an increase in the number of interlibrary loans, the Library having handled this year 1,060, as against 923 last year. Of these, 652 were books lent, and 408 books borrowed. In addition to these, a growing number of photostats and microfilms proved a cheap and satisfactory substitute for interlibrary loans.

During the year the binding and mending department has prepared for binding 3,392 volumes, mended 2,063 volumes, and placed in pamphlet binders or boards 1,087. During the year there were filed in the depository set of the Library of Congress cards a total of 135,749 cards.

During the year the Librarian has served as Vice-Chairman of the Canadian War Services Library Council, which exists for the purpose of supervising and co-ordinating the provision of reading materials for Canadian troops both in Canada and overseas, and the University of Toronto Library has been made available as a central store house for the collection and distribution of books placed at the disposal of the Canadian War Services Library Council.

Among bequests to the University Library which became effective during the year, the most notable was that of a large part of the library of the late Principal Hutton, which came to us under the terms of his will, after a number of other beneficiaries had taken what books they wanted. The collection contained a surprisingly large number of books which the University Library did not possess, and also a considerable number of duplicates of which use can be made. Included in the collection was also a certain amount of material of importance for the history of the University.

In conclusion I should like to bring to your attention the loyal and, I believe, efficient service rendered to the University by my assistants on the University Library staff. While undertaking, in many cases, a heavy load of war work out of hours, they have at the same time carried on their duties in the Library in a manner that deserves high praise. I should like to commend to you especially the services of the Assistant Librarian, Miss Hilda Woolryche, who has assumed the responsibility for the administration of the Library while the Librarian was absent on other duties.

W. S. Wallace

REPORT OF THE DIRECTOR OF THE DAVID DUNLAP OBSERVATORY

Observing conditions during the past year have been about average. The large telescope was used for 1,238 working hours as compared with a six-year mean of 1,265. During the year 1,102 plates were obtained of which 143 were made at the Newtonian focus and the remainder with the one-prism spectrograph. To date 6,879 plates have been secured.

The war has deprived the Observatory of the following members of the staff: In July, 1940, Mr. G. H. Tidy joined the Canadian Navy. He is now Sub-Lieutenant Tidy, R.C.N.V.R. In November, 1940, Dr. J. F. Heard entered the Air Force. Flying Officer J. F. Heard, R.C.A.F., has completed a course at the Air Navigation School, Rivers, Manitoba, and is now serving as an instructor in the Air Observers' School, at London, Ontario. In the same month, Mr. W. F. M. Buscombe, engaged as a part-time assistant, entered the Dominion Meteorological Service in a civilian capacity and is serving as a weather forecaster and instructor in Meteorology in connection with the Empire scheme of the R.C.A.F. In January, 1941, Dr. P. M. Millman entered the Air Force. Flying Officer P. M. Millman, R.C.A.F., is now serving as instructor at Malton, Ontario.

Owing to the loss of the services of these members of the staff, improvement and extension of the Observatory equipment have had to be somewhat curtailed. We have, however, found time to continue the construction of the large vacuum tank for aluminizing the 74-inch mirror mentioned in our last report. We hope to see it in operation before another year. Three improved models of the sextant for aerial navigation designed by Dr. Hogg and mentioned in last year's report have been constructed under a grant from the National Research Council. These instruments are undergoing tests by the R.C.A.F. and the R.A.F.

There are now 4,197 volumes in the library of the David Dunlap Observatory. Of this number 1,780 are on loan from the Royal Astronomical Society of Canada and 379 from the Dominion Meteorological Service. The accessions during the year are 358 and are as follows: Transferred from the University office, 4; gifts, 234; purchase, 15; exchange, 6; on loan from the Royal Astronomical Society of Canada, 19; on loan from the Dominion Meteorological Service, 80.

In addition there is a large amount of unbound material, not included in the figures given above, which should be bound if money were available.

The Superintendent's Office has continued to transplant trees about the grounds from the nursery set out two years ago. This spring about a thousand more were transplanted. Those set out in the past two years have made good progress.

During the year 2,739 visitors were shown through the Observatory or took the opportunity to view the sky through the large telescope.

R. K. Young

REPORT OF THE DIRECTOR OF THE ROYAL ONTARIO MUSEUM OF ARCHAEOLOGY

For the second year in succession we have had little or no money for the purchase of exhibits, so that most of the year's accessions have been gifts; a great variety of objects have been presented by ninety-four people.

The Textile Department in particular has had a prosperous year, benefiting by the generosity of twenty-eight donors to the extent of 120 pieces. Outstanding additions to the collection are five dresses ranging in date from 1800 to 1820, the gift of Mr. Sterndale Bennett; two French eighteenth-century fans from Mrs. Francis Grey of Boston; a collection of nineteenth-century costume consisting of children's clothes and ladies' dresses and underwear, the gift of Mrs. R. J. Mercur of Montreal; two early samplers from Mrs. H. A. Thompson; and a Chantilly lace dress and parasol presented by Mrs. F. N. G. Starr. A good many gaps in the costume collection have been filled by these and other gifts, which is extremely satisfactory. In September, Mrs. Marta Dycmonaite Zilaitiene gave to the Museum a Lithuanian woman's costume, her most valued possession; it had been handed down from mother to daughter for five generations.

The Board of Trustees has recently appointed Miss Macdonald, who has long been in charge of the Department, Deputy Keeper of Textiles and Chief Draughtsman.

A good many books have been presented during the year, among them several important additions to our library.

The Department of Ethnology has been fortunate in receiving a large number of gifts, of which only the most important can be mentioned. Mr. O. D. Boggs presented a double perforated hammer and other material from Ecuador. Mr. L. A. Learmonth, who has always been generous to the Museum, gave us a cannon from Fury Beach, and some very interesting Eskimo material. Some Indian implements from the district of Kindersley, Saskatchewan, were given by Mr. W. H. Howes of Kindersley. Dr. Sherwood Fox of the University of Western Ontario was good enough to give us a Bolivian bow and three arrows from a collection made by his father. We received some Indian material from Renfrew County, the gift of Miss Margaret MacEwen. Mrs. L. T. Burwash has presented the whole very considerable collection of Eskimo material made by her late husband, Major L. T. Burwash. A very nice Mexican carved stone mask came to us from Mrs. Edith Mary Watson of Guelph.

We are most unfortunate in losing the services of Dr. Philleo Nash, who has been for several years a member of our staff, and it will be difficult to replace him. As Assistant Keeper of the Ethnological Collections, Dr. Nash rendered valuable service to the Museum, especially in connection with the excavation of the Indian village site at Aylmer. The Board of Trustees has appointed Mr. Kenneth Kidd Assistant Keeper in Dr. Nash's stead.

Among the interesting accessions to the collections of the East Asiatic Department the following should be mentioned: a generous gift from Dr. Cody for the purchase of a very important collection of Chinese coins; a Chinese pottery ox and cart of the T'ang dynasty presented by the T. Eaton Company; a fine Japanese sword in an inscribed sheath, gift of Dr. L. T. Morgan.

Mr. C. Sauerbrei presented a collection of extremely fine photographs of Indian and Burmese subjects, and another collection of photographs of architectural and archaeological subjects in India was received from Mrs. S. T. Franks. They will be useful illustrations for study and teaching purposes.

From the subscriptions of members, who in spite of the war and heavy taxation have been as generous as ever, the following pieces were added to the ceramics collection: an English cut-glass decanter of about 1780; an English cut-glass water jug of the early nineteenth century; a Sèvres plate painted by LeBel the Younger in the second half of the eighteenth century; and a black and white basalt type jug by Adams of Tunstall, late eighteenth century.

From this fund was also purchased some fine furniture: an English twopedestal breakfast table of about 1810; a French walnut armchair, mid-eighteenth century, of Louis xv design; and an English pine console table with black and white marble top, of the early eighteenth century. The members have thus helped to fill gaps in both these collections, augmenting gifts which have come in from time to time. As the public is becoming more and more interested in European furniture and decoration, we are fortunate in having the assistance of our members, especially in war-time, in obtaining important pieces to round out the collections.

In the metal-work section, the chief gifts were a silver cup made by Michael Arnoldi, which belonged to one of Wolfe's officers, and came to us from the estate of Miss Frances Augusta Bradt; and two bronze mass bells dated 1728 and 1730, from Mrs. Edith Mary Watson.

Two interesting murals, designed and executed by Miss Sylvia Hahn, a member of our staff, have recently been mounted on the east walls of the Armour Gallery. These paintings are of Saracens and Crusaders on horseback, and add colour and life to the gallery.

Chinese Temple Frescoes, Museum Study No. 3, by Dr. W. C. White, was published during the year, under the Rockefeller Foundation's grant.

In the death on April 28 of Miss Ethlyn M. Greenaway, Secretary and Assistant to the Director, the Museum of Archaeology suffered a well-nigh staggering blow. For more than twenty-two years she had watched the Museum grow up, and contributed materially to its orderly development. The Museum was a large part of her life, and her interest in it never flagged. To each member of the staff she was an ever-ready friend and adviser, and her really charming personality is missed as much as her great ability.

A further serious loss was suffered by the Museum as a whole in the death on May 26 of the Chairman of the Board of Trustees, Dr. James B. O'Brian, who had served the best interests of the Museum so whole-heartedly and unselfishly for twenty-nine years. Every member of the staff felt that Dr. O'Brian had his interest very much at heart, and that he stood behind each one of them in any difficulty.

C. T. Currelly

REPORT OF THE DIRECTOR OF THE ROYAL ONTARIO MUSEUM OF GEOLOGY

The activities of the Museum were much curtailed again during the past year owing to the war. No funds were available for purchases or an assistant. Considerable material was, however, added to the collections through donations and collecting.

Donations received during the year

A very interesting series of specimens of the potash minerals mined at Carlsbad, New Mexico; unusual crystals of selenite, specimens of agate, white opal, and fluorescent cave onyx from New Mexico. From Mr. R. M. P. Burnet.

Refined potash from the United States Potash mine. From the United States Potash Mining Company.

A remarkable pyritic ball apparently from a pot hole. From Saskatchewan and presented by Mr. G. Evanovitch.

Petrified wood from the Devonian formations, in Ontario. From Dr. G. H. Reavely.

Copper ore from Elk Lake, Ontario. From Mr. A. L. Reeve.

A collection of various rocks. From Dr. V. J. Okulitch.

Collections

The Director collected a large quantity of geological materials in eastern Ontario with the object of supplying specimens to schools in the province when the teachers desired to have them. At least four schools received such collections.

E. S. Moore

REPORT OF THE DIRECTOR OF THE ROYAL ONTARIO MUSEUM OF MINERALOGY

In addition to the ordinary routine of museum work the Director has devoted most of his energy during the past year to certain unusual phases of the mineral industry connected with war work and, although the details are not available for publication, it may be said that directly and indirectly he has been responsible for the collection and utilization of a considerable quantity of two much needed minerals that heretofore have gone to waste.

Among the special exhibits, the crystal cave, the case to exhibit the colours of minerals, the fluorescent minerals, and the lodestone compass continue to be of interest to young and old alike.

In October a special exhibit of minerals collected and cut by members of the Walker Mineralogical Club was installed in two wall cases for about six weeks. Special thanks are due to Messrs. G. E. Steel, G. G. Waite, D. Horsfall, O. W. Titus, and the late R. H. Combs for the success of this exhibit.

An opportunity was offered to twenty pupils from the collegiate institutes and technical schools of Toronto to come for an hour a week for ten weeks to take work in the sight identification of minerals. This work was in charge of the museum assistant, Mrs. R. B. Burgess. The results were so satisfactory that it is proposed to continue the same plan for another year.

Important exchanges are as follows:

A suite of New Mexico minerals. From F. A. Miles.
Minerals from Ohio. From C. S. Bullen.
Minerals from New Mexico. From the American Mineral Exchange.
Some British Columbia minerals. From H. V. Warren.

Among the outstanding donations are the following:

A large agate. From Miss A. A. Malcolm.
Pyroxene, apatite, fluorite, smoky quartz crystals from Ontario. From W. E. Clark.
Amethyst. From Mrs. Bairns.
Garnet, green tremolite, and apatite from Ontario. From G. E. Steel.
Unusually rich cassiterite from Indo-China and from Cornwall, England. From W. T. Opie.
Minerals from Nevada, Arizona, and Colorado. From C. A. Claflin.
Halite from Nova Scotia. From the Malagash Salt Company.
Vesuvianite from Maine and New Hampshire. From G. W. Stewart.
Fine aquamarine from Lyndoch Township, Ontario. From D. W. F. Caldwell.
Stalactite from Bermuda. From C. T. Currelly.
Gold ore from the Hollinger Mine. From John Knox.
Pyrite crystals from the Paymaster Mine. From D. A. Davis.
Cordierite from Great Slave Lake. From F. G. Smith.
Pyrite and associated minerals from some Ontario mines. From J. E. Hawley.
Manganese minerals from Tennessee. From Frank Ebbutt.
Moss agate from Michipicoten Island. From G. G. Waite.
Silver from the O'Brien Mine. From J. P. Vesper.
Cut and uncut gem stones. From A. F. Brigham.

Purchases of Canadian minerals of special interest include:

Emerald, Dryden District, Ontario. From R. E. Wice.
Platinum nugget, Tulameen River, B.C. From H. Gilbert.

A. L. PARSONS

REPORT OF THE ASSISTANT DIRECTOR OF THE ROYAL ONTARIO MUSEUM OF PALAEONTOLOGY (INVERTEBRATE SECTION)

Owing to the limited appropriation and to the loss of our preparator over a year ago, work in this section of the Museum has of necessity been greatly hampered. Since it has not been possible to make any extensive purchases no specimens of a distinctly rare or spectacular nature have been added to the collections and, in consequence, no outstanding gallery exhibits have been arranged. The most valuable new material has been secured through the medium of exchange, by gifts, or by collection by members of the staff.

Acquisitions by Collection

Scolithus linearis and ripple marks from Potsdam sandstone near Ottawa, Ontario. By M. A. Fritz.

Ordovician fossils from Rohallion, Ontario. By H. F. Belding.

Acquisitions by Exchange

Collection of Trenton fossils from type locality at Trenton Falls, N.Y., in exchange for Cambrian trilobites from Middle Cambrian, B.C. From Ward's Natural Science Establishment, Rochester, N.Y.

Acquisitions by Donation

Well samples from Achilles well No. 1, Tehkummah Township, Manitoulin Island, containing microfossils. From C. Godefroy, Toronto.

Collection of miscellaneous fossils from Esquimalt, B.C. From the Normal School, Toronto.

Bryozoa from Power-Joncas townships, eastern Gaspé. From Quebec Bureau of Mines.

Trenton limestone with brachiopods collected near Rohallion, Ontario. By V. J. Okulitch.

Fossilized wood and peat from Scarborough, Ontario. From E. M. Proctor, Toronto.

During this period of limited expansion our activities have been confined chiefly to the work of preparation, description, and reclassification of the already extensive fossil collections—work which has been somewhat neglected during more prosperous and favourable times.

Laboratory Work

In this connection laboratory work has consisted of the cutting and polishing of specimens to improve the gallery exhibits; the remounting of many old thin sections from the permanent collections; and the preparation of new thin sections for the palaeontological studies in progress during the year.

Research

Research in micropalaeontology has been carried on among the *Anthozoa* and *Bryozoa* from collections obtained in eastern Quebec including Gaspé. Further work on the catalogue of Museum types, Part I of which was published during the year, is being done.

Exhibits

With regard to exhibits the type specimens among the *Protozoa*, *Porifera*, *Anthozoa*, *Graptozoa*, and *Stromatoporoidea*, specimens that are incapable of duplication and, therefore, the most valuable, have been emphasized in the gallery. They may now be distinguished from the ordinary specimens by symbolic markings of coloured paper—small gold diamonds indicate primary types, silver pyramids secondary types, while white circles signify those of a less essential character.

Educational Activities

Concerning the educational activities of the Museum as a whole, members of the staff have assisted as usual in conducting numerous organized as well as informal groups of children and adults through the galleries and in answering the ever-increasing number of inquiries from the public regarding fossils.

MADELEINE A. FRITZ

REPORT OF THE ASSISTANT DIRECTOR OF THE ROYAL ONTARIO MUSEUM OF PALAEONTOLOGY (VERTEBRATE SECTION)

During the past year the staff of the Vertebrate division has been working mainly on preparation of the skeleton of the giant dinosaur *Diplodocus*, secured late in the preceding year by exchange from the Carnegie Museum of Pittsburgh. A great deal of work remains to be done on this specimen, and it is not expected to be ready for exhibition in the near future. Its inclusion in our Dinosaur Gallery will involve drastic rearrangement of the present exhibits. The importance of this acquisition, apart from its striking size, is due to the fact that it completes our representation of the five sub-orders of dinosaurs.

Late in the year we secured a fine skeleton of the aquatic rhinoceros *Teleoceras*, from the Pliocene of Kansas. This was purchased from Mr. George F. Sternberg, of Hays, Kansas, under a previous agreement, by which we secured the specimen at a very reasonable cost. Space had been left for this specimen in the Gallery of Fossil Mammals, and it will be a fine addition to our rhinoceros series.

During the summer of 1940 the writer made an automobile trip across the western provinces and adjacent United States to obtain additional data on the geology of this region. This expedition was financed by the Geological Society of America. In addition to the geological data and the large series of invertebrate fossils obtained, some vertebrate material was collected in Saskatchewan and in Manitoba. Numerous natural-colour photographs were made of the fossil-bearing rocks of the west, and these will serve to illustrate Museum lectures on Vertebrate Palaeontology. A temporary exhibit has been placed in the Fossil Mammal gallery to show some of the more important material obtained during this trip, and also by the Museum expedition of 1939.

The fine series of fossil fishes in our collections was studied during the year by Dr. Raymond M. Sternberg, and a start was made on the rearrangement of this material. Valuable new information came to light during these studies, which has formed the basis for several descriptive papers by Dr. Sternberg.

For the first time in some years a senior course in Vertebrate Palaeontology was given under the auspices of the Department of Geology, and the collections of the Museum were used to illustrate this. The students in this course prepared models of fossil fishes and of mammalian teeth, which will be useful in museum work. The elementary courses in Palaeontology and Historical Geology also used our material at times.

The following are the principal vertebrate acquisitions during the year:

Acquisitions by Collection

Fish fossils from the Cretaceous of Saskatchewan and Manitoba.

Acquisitions by Donation

Collection of teeth of the Pleistocene horse *Equus niobrarensis* from near Saskatoon, Saskatchewan. From V. A. Vigfusson, University of Saskatchewan.

Fine tooth of the Cretaceous shark *Ptychodus*. From Ray Mayhew, Treherne, Manitoba.

Acquisitions by Purchase

Skeleton of the rhinoceros *Teleoceras fossiger* from the Pliocene of Kansas. From G. F. Sternberg, Hays, Kansas.

L. S. RUSSELL

REPORT OF THE DIRECTOR OF THE ROYAL ONTARIO MUSEUM OF ZOOLOGY

Greater emphasis on education and less on research is a marked feature of recent museum work. This trend is desirable in many ways but if continued too far may seriously interfere with the acquisition of new knowledge about the animal life of our area.

The increase in educational work has resulted from the increasing appreciation of the services which the Museum can render through gallery instruction, lectures outside the Museum, loan of specimens, lantern slides, etc., identification of specimens and supplying information to enquirers by telephone, correspondence, and personal calls.

The decrease in research has resulted from a number of causes. The increase in educational work leaves less time for research, and reduced appropriations interfere with field work and also with the employment of cataloguing assistance, thus throwing more of this work on the scientific staff. During the past year the incorporation of the extensive collections and library of the late J. H. Fleming has involved much work.

Under present conditions it is perhaps right that greater effort should be placed on the dissemination of natural history knowledge for the value it will have in relieving mental strain incident to the war, and also because an appreciation of natural laws is of fundamental importance in conservation which is so badly needed if our resources are to yield us the maximum return in the future.

However, so little is known about our animal life in comparison with what needs to be known that the acquisition of new knowledge by field work, acquisition of specimens, and the study of accumulated material must not be allowed to be indefinitely curtailed.

The following number of specimens were added to the collections in the various divisions: mammals, 565; birds, 33,357; birds' nests, 99; sets of eggs, 303; reptiles, 66; amphibians, 282; fish (lots), 382; insects, 8,969; molluscs (lots), 1,086; other invertebrates, 2,172. Additions to the library were 2,350 bound volumes and 13,029 pamphlets and journals. Of these, 2,220 books and 10,944 pamphlets belonged to the Fleming library.

The ornithological collection and library of the late J. H. Fleming constitute by far the greatest single contribution ever made to the collections and library of the Museum of Zoology. This collection contained 32,267 bird skins but, large as this number is, it does not in itself indicate the unique importance of the collection. The collection had been built up through a lifetime of work by one who was familiar with all the great bird collections of the world and who understood the value of different types of material. It is regarded as the most representative private collection of birds of the world. Of the 166 families of birds recognized, the Fleming collection contains representatives of all but three; genera represented are 2,073. The collection includes several type specimens and many paratypes and topotypes; vanished and vanishing birds are particularly well represented. Included in the library are most of the modern reference works on birds in the English language as well as complete sets or nearly complete sets of all the important ornithological periodicals. The collection also contains many rare and obscure publications now difficult to obtain. The collection of bound separates is particularly outstanding. The addition of the Fleming collection and library places the Royal Ontario Museum among the leading ornithological collections in America. In ornithological literature our library is now second only, in Canada, to that of the great Casey Wood ornithological library at McGill University.

Among other donations the following were the more important:

520 identified Lepidoptera from South America, 130 bird skins and 3 sets of eggs from Ecuador. From O. D. Boggs.

50 lots comprising about 980 specimens of Hawaiian marine shells. From J. G. Dickenson.

99 lots of fishes from Algonquin Park. From the Fisheries Research Laboratory, Department of Biology.

85 Lepidoptera, 42 birds, 1 nest, 1 set of eggs. From W. E. Hurlburt.

112 lots of molluscs from Michigan and south-eastern United States. From Phil. Marsh.

275 lots of Canadian marine shells. The Ottawa marine molluscs together with a recent purchase of boreal marine molluscs renders our Canadian marine series much more complete than it formerly was but many species are still lacking so that identification of marine species for fisheries workers is still a hazardous task. From the National Museum of Canada.

8,000 exotic insects chiefly Coleoptera. From the Ontario Agricultural College.

2 specimens (winter and summer) Peary's Caribou from Ellesmere Island. From the Royal Canadian Mounted Police.

129 bird skins, the property of her father, the late J. E. Wetherell. From Alice Wetherell.

An exhibit was installed illustrating the game, fur, and fisheries resources of Ontario and the work of the Ontario Department of Game and Fisheries in administering this resource. Mounted animals added to the exhibition series included Peary's caribou, albino peacock, wire-haired fox terrier, Indian sled dog, and Basenji dog. The collection of enlarged models of insects was enlarged to include cockroach, flea, ant, bed bug, spruce sawfly larva and its parasite.

Under Reuben Wells Leonard bequest, the faunal survey of the Patricia portion of Kenora District was continued during the summer of 1940 when the Fort Severn area on Hudson Bay was visited. The expedition was of interest for historical reasons. Birds and mammals collected at Fort Severn by factors of the Hudson's Bay Company in the middle of the eighteenth century were the first zoological collections made in Ontario. Eight species new to science were described as a result of this early collection at Severn: seven of these were collected in series by last summer's expedition to the area. Five species were added to the list of birds known to breed within Ontario and twelve recorded for the first time as summering in the province. The studies also revealed the presence along the coast of Ontario adjoining Hudson Bay of a strip varying in width from five to ten miles where sub-arctic conditions prevail.

Gallery instruction of classes and other groups is increasing. During the year 105 such groups totalling 6,056 persons received instruction in the zoological galleries. Many of these groups visit other parts of the Museum as well but quite a number come for instruction only in zoology.

The American Society of Ichthyologists and Herpetologists held its annual meeting in the Museum on September 2, 3, and 4.

J. R. Dymond

REPORT ON THE EDUCATIONAL WORK OF THE ROYAL ONTARIO MUSEUM

The educational work of the Museum has been carried on with marked success during the past year.

Miss Ruth M. Home, Supervisor of the Division of Public Instruction, reports expansion along several lines. While the number of adult groups has been cut down due to war-time activities, the demand for children's classes has steadily increased.

Courses for Teachers

The special classes instituted in 1939 to assist teachers with their work in Social Studies have been continued this year, and welcomed with enthusiasm on the part of many teachers. These courses are designed to familiarize teachers with material in the Museum that is correlated with the school curriculum. Following up this instruction, many teachers brought their classes to see the collections discussed, and for these groups special moving pictures dealing with the subject were shown at a later date.

The Normal Schools of the province availed themselves of the opportunities afforded at the Museum for special study and groups from North Bay, Peterborough, Hamilton, London, Stratford, and Toronto Normal Schools spent a day or part of a day studying the collections under the guidance of members of the Museum staff.

In order to be of service to teachers throughout the province who are unable to visit the Museum, a pamphlet entitled *Growing Up from Nothing* for use in Grade IV Social Studies was prepared in the Museum in collaboration with *The School* magazine, and over three thousand copies distributed. The publication of pamphlets along similar lines is contemplated for the coming year.

Out-of-Town Groups

Owing to transportation difficulties, only two large groups of school-children, one from Kitchener and the other from the Bruce County Inspectorate, visited the Museum during the year. Among the towns and cities from which smaller groups came were the following: Acton, Aurora, Burlington, Brampton, Ballycroy, Buttonville, Georgetown, Guelph, Hamilton, Islington, KinKira, Long Branch, Milton, Oakville, Port Colborne, Stamford Centre, Warsaw, Waterdown, and Westdale. The total attendance from out of town was 4,241.

Thirty members of the McGill Library School visited the Museum in April. In May a group of teachers and students from the New York State College of Ceramics at Alfred, New York, spent four days in intensive study of the Museum collections. It is hoped that this visit will become an annual event.

Miscellaneous Groups

Industrial and professional organizations are becoming increasingly aware of the attractive facilities offered by the Museum for the entertainment of groups. Among these may be mentioned the visit of the wives of the delegates attending the conventions of the American Electrical Engineers and the Association of Ontario Druggists; a group of nurses from the Toronto General Hospital; the executive of the Federation of Women Teachers; the University Arts Women's Club; the Teachers' Artists' Association.

Regular monthly meetings of the Toronto Field Naturalists' Club, the Toronto Aquarium Society, and the Junior Field Naturalists are held during the lecture season.

The total attendance under this head was 10,987.

School Classes—Toronto

Instruction was given by Miss Home and members of the staff to 7,243 from public schools; 4,464 from private schools; and 1,705 from high schools. Dr. F. A. Urquhart conducted many groups desiring to learn of animal life and nature study through the Zoology galleries.

Moving Pictures for Children

Special films for children were shown during the Christmas and Easter holidays, attracting some 5,728 children. These programmes are made possible through the contribution for the work with children made last year by a generous patron.

The Children's Room

On Saturday mornings from October to May a group of children varying in number from 12 to 50 met regularly for special study of museum material. A new undertaking was the making of puppets under the direction of Miss Sylvia Hahn, culminating in a puppet show at the end of the season and an exhibition of the year's work.

The Museum Hobby Club of Upper Canada College met once a week during the school term for study in the galleries, resulting in the publication of a magazine with illustrations and articles based on the museum collections.

Public School Classes

During the school year Miss Lilian J. Payne, teacher under the Board of Education, lectured to 688 classes of children from Grades IV, V, VI, and VII, with an attendance of 26,353. From the list of forty-four subjects offered to the schools, the most frequently asked for were the following: Pioneer Life in Ontario, the Egyptian Galleries, Indians, Natural History, Roman Britain, Prehistoric Man, Science in the Rocks.

Art Students

In addition to the educational work mentioned above, 3,346 art students from the Ontario College of Art and the technical schools of the city visited the Museum to study and sketch in the galleries.

University Students

10,705 visits were paid by undergraduate and graduate students of the University of Toronto to attend classes conducted by University professors on the Museum staff. Class rooms are provided for lectures in Anthropology, Classical Archaeology, Fine Art, Palaeontology, and Zoology.

Attendance

Total attendance for the year ending June 30 was 247,783, an increase of 20,041 over last year.

News Release

Early in 1941 the Committee of Directors considered ways and means to extend to the public fuller information about the Museum and its work. It was finally decided to issue a monthly release of informative news, in the form of short popular articles and announcements. These releases have been forwarded to all Ontario daily and weekly papers that set all or part of their type for publication, and have been found acceptable to a large number of editors throughout the province. It is planned to continue this service during the coming year in the hope that in so doing the Museum may become established in the minds of our citizens as an outstanding scientific and cultural centre in which they can well take pride.

A. Helen Reynar

REPORT OF THE DIRECTOR OF THE CONNAUGHT LABORATORIES

This is the twenty-eighth annual report of the Connaught Laboratories and records progress of the work in the Laboratories in 1940-1. Of first concern in the conduct of this work during the year has been the carrying forward of research and the preparation of products related to the war. At the same time, it has been necessary that the essential services rendered by the Connaught Laboratories in Canada be fully maintained and that possible emergencies be anticipated.

Bacteriology and Immunology

Through the co-ordinated efforts of many members of the staff a combined prophylactic vaccine against typhoid-paratyphoid fevers and tetanus has been prepared for use in the armed forces of Canada. In the successful outcome of this project, it is a pleasure to acknowledge the very valuable contribution made by students of the Ontario College of Pharmacy and members of the Connaught Laboratories and workers in the School of Hygiene in submitting to the experimental trials of this combined vaccine. Dr. James Craigie and Dr. M. C. Maitland have made important improvements in the quality of typhoid vaccine.

Dr. Ronald Hare with the assistance of Dr. Reba Willits and aided by a grant from the National Research Council has completed his study on haemolytic streptococcus infection of wounds. Evidence has been obtained that these organisms are not present at the time of the wounding and that the most important source of infection is the nasopharynx of the person dressing the wound. Other sources of infection have been investigated. The work is being carried out in collaboration with Dr. W. E. Gallie and members of the Department of Surgery.

Mr. R. J. Wilson has continued his studies in staphylococcus food poisoning which is of not infrequent occurrence especially in the summer months. He has also made practicable the preparation of whooping-cough vaccine in a liquid medium which it is anticipated will make possible important economies in production. Dr. N. Silverthorne has continued his clinical and laboratory studies in meningococcal and influenzal meningitis, whooping cough, and dysentery. The effectiveness of a serum for the prevention and treatment of whooping cough will be determined by clinical trial.

Dr. Helen Plummer and Dr. Edith Taylor have successfully produced large amounts of toxin with organisms of the tetanus and gas gangrene group for the purpose of immunizing horses. This project has assumed great magnitude and importance because of the requirements of the armed forces for tetanus and gas gangrene antitoxins. Dr. Frieda Fraser has typed the streptococci of scarlet fever among civilians and members of the armed forces, which research has an important bearing on the epidemiology of the disease. Dr. L. N. Farrell has carried out investigations in dysentery and a supply of serum for the treatment of possible outbreaks of the Shiga type of dysentery in the armed forces is now available. Dr. Ella Kuitunen has extended her studies of human intestinal parasites. She has completed a comprehensive clinical trial of the curative value of phenothiazine in enterobius (pinworm) infection of children and adults. The clinical trial of improved diphtheria antigens has been extended and the diphtheria carrier study in co-operation with Dr. A. B. Moffat and the Department of Public Health of the city of Toronto has been continued.

Physiological and Biochemical Studies

One of the major undertakings associated with the war has been the preparation of dried human blood serum for use in the treatment of persons suffering from shock following injuries or accidents. This highly important work was initiated by Dr. C. H. Best with members of the staffs of the Department of Physiological Hygiene in the School of Hygiene and the Department of Physiology, shortly after the commencement of the war. When the need arose for facilities to permit of preparing large quantities of the serum, the Connaught Laboratories, which had assisted in the work from its commencement, were asked by the Department of Pensions and National Health to undertake the responsibility for its preparation. Large mechanical equipment is required and was accommodated temporarily in the City Section of the Laboratories. It is planned that the existing equipment and additional drying units will be accommodated in new quarters in the Farm Section. The development of work related to dried human blood serum is the outcome of conjoint effort of Dr. Best and his collaborators, and of the Connaught Laboratories, the National Research Council of Canada, the Department of National Defence, the Department of Pensions and National Health, and the Canadian Red Cross Society. The first drying unit was purchased and provided by the Department of National Defence. Provision for the enlarged work was made by the Department of Pensions and National Health. The Canadian Red Cross Society is responsible for the collection of blood from voluntary donors throughout Canada and for the forwarding of the blood or serum to the Connaught Laboratories for processing. In the Connaught Laboratories, Dr. Jessie H. Ridout has been responsible for much of the exacting work involved in the preparation of the serum for drying.

Dr. C. H. Best and Dr. R. E. Haist, with the assistance of Miss Helen J. Bell, continued work on the factors affecting the Insulin content of the pancreas. The observations made are of fundamental importance. With Professor A. W. Ham of the Department of Anatomy, studies on the histology of the islets of Langerhans in the pancreas under different conditions have been continued.

A variety of work has been undertaken in the section of Nutrition under Dr. E. W. McHenry. Dr. E. Gertrude Gavin and Dr. McHenry have continued the study of the relation of the B vitamins to fat synthesis and metabolism, in part of which work Dr. H. E. Longnecker of the University of Pittsburgh collaborated. Miss Helen Perry working with the aid of a grant from the Banting Research Foundation has extended her study of the relation of vitamins C and P to capillary fragility. Miss Jean Patterson has continued observations on the effect of vitamin A on metabolism. These vitamin investigations have been materially assisted by a grant from the Division of Natural Sciences of the Rockefeller Foundation. Miss Patterson and Dr. McHenry have completed their survey of food consumption in Toronto families.

Mr. H. D. Bett has continued investigations on the purification of the anti-anaemic factor of liver. He has been able to prepare on a large scale a very active purified solution. This extract has given optimal response in human cases of pernicious anaemia in doses having extremely low content of total solids. Dr. G. A. McVicar has studied the purification and concentration of adrenal cortical extract and has prepared highly potent preparation. He has also investigated the effects of thymoxyethylamine in protecting animals against histamine and anaphylactic shocks.

The work of the section of Industrial Hygiene under Dr. Hugh M. Barrett has been in large part on special war problems. In addition, studies on the mechanism and treatment of phosgene poisoning in animals have been conducted. Mr. I. G. Goddard investigated the toxic action of certain petroleum distillates containing benzene and in collaboration with Dr. R. J. Schnitzer studied the effect of benzene poisoning and infection in animals. The carcinogenic activity of certain samples of coal tar have been investigated with the hope of explaining the high incidence of pulmonary cancer that has occurred recently in an Ontario industrial plant. Mr. H. N. MacFarland has continued Mr. Goddard's study of the metabolic fate of trinitrotoluene in the body.

In the field of biphysics, research under the direction of Dr. D. Y. Solandt on the physiology and therapy of denervated muscles has been aided by a grant from the National Foundation for Infantile Paralysis. Dr. J. W. Magladery did excellent work in this field until his departure for England to take an appointment under the Medical Research Council. Dr. Ruth Partridge and recently Mr. John Hunter have continued this work. Important new findings have been made and the application of this new knowledge to therapeutic procedures is being studied. Dr. C. H. Best and Dr. Jeanne M. Fisher have continued investigating the etiology of wound shock. It has been found that potassium may be a contributory cause but is not the chief etiological factor in traumatic shock. Miss Ursula Dale has assisted in the work on the effect of dietary choline and methionine on the cardiac response of acetylcholine released by vagus nerve stimulation in mice. This is the first indication of a dietary factor involved in neuro-humoral activity. Dr. Best and Dr. Solandt have carried out research work on some of the special physiological problems which have presented themselves in the Royal Canadian Navy and the Royal Canadian Air Force. Part of this work has already been completed and has yielded results of practical importance.

Under the direction of Dr. D. A. Scott, two visiting biochemists carried out research during the past year. Dr. W. G. E. Eggleton of the Henry Lester Institute of Medical Research worked on methods of estimating zinc in biological materials; Dr. J. R. Mendive, the holder of a fellowship from the Argentine Academy of Sciences, worked on the purification and chemical properties of carbonic anhydrase. Two papers have been published on this enzyme by Drs. Scott and Mendive. Further work on the large-scale preparation of Insulin has been carried out by Dr. A. M. Fisher and Mr. R. G. Romans.

Chemotherapeutic Studies

Dr. R. J. Schnitzer and Dr. Charles Siebenmann have prepared more than a hundred new compounds during the year. Many of these have been studied and several have been found to possess activity against certain bacteria. In collaboration with Dr. Barrett, they have investigated the influence of benzene poisoning on natural resistance and experimental immunity against streptococci. Metal compounds with trypanocidal activity have been prepared and work on chemotherapy of virus diseases has been started.

Virus Studies

In the Virus section during the past year, special attention has been paid to poliomyelitis, equine encephalomyelitis, and typhus, while the work on specific typhoid phages has been continued. During the earlier part of the year, further studies of vaccinia and cowpox viruses were made with special reference to the problems of variation and cell affinity. However, in view of the greater urgency of other work, continuation of these studies has been deferred. Research work on typhus was commenced last June with the aid of a grant from the National Research Council of Canada. This work has been prosecuted with special reference to the possibilities of achieving immunization against European and murine typhus. The development of a typhus vaccine presents special problems since the causal rickettsia of typhus, like viruses, can be grown only in living cells. Gratifying progress has been made in solving the technical problems of large-scale production of purified suspensions of typhus rickettsia adapted for use as vaccine but, on the other hand, further problems in typhus research have developed as a result of this work and much remains to be investigated with the facilities now available. A further grant for the present year has been provided by the National Research Council of Canada and the work is being continued. In view of the nature of the infective agents involved, it was necessary to equip a special unit at the Farm Section of the Laboratories, and although the study of typhus was instituted as a war research, the facilities thus created may be very valuable for future studies of rickettsial infections, such as endemic typhus, Eastern and Western Rocky Mountain spotted fever, and "Q" fever, which occur in the United States and are either known or are suspected to have occurred in Canada.

Within the last few years, it has been established that poliomyelitis virus is excreted from the alimentary tract of cases and contacts, but the significance of this as regards epidemiology of the disease and control measures to check spread of the disease is not yet clarified. Some technical difficulties attend the isolation of this virus from stool specimens and sewage and it is as yet uncertain whether all individuals harbouring the virus in their alimentary tracts can be identified by successful isolation of the virus. It is of considerable importance to determine whether the sporadically observed presence of virus in the alimentary tract represents merely sporadic and accidental presence there or whether imperfections in methods of isolation result in identification of the virus only in a small percentage of individuals harbouring it. During the past year, Dr. Craigie and Mr. J. W. Fisher have been investigating technical problems of isolation of poliomyelitis virus with the aid of a substantial grant from the National Foundation for Infantile Paralysis. This work has advanced to a stage where it is planned to make practical application of the observations in conjunction with epidemiological studies when suitable occasions present themselves. Under the direction of Dr. Craigie, Dr. N. A. Labzoffsky has continued his studies on equine encephalomyelitis virus with special reference to immunity, the mode of action of neutralizing antibody, and the complement-fixation reaction with this virus. In connection with the complement-fixation reaction, further observations of general interest in the field of virus complement-fixation reactions have been made.

Work on specific typhoid phages has been continued primarily in the virus field as a study of variation and acquired cellular resistance. However, a number of laboratories in Canada and the United States have adopted the bacteriophage method of typing strains of *B. typhosus* in the interests of standardization. At the present stage of development of this subject, supplies of standard bacteriophage preparations and cultures of the type strains of *B. typhosus* are provided to laboratories using this typing method.

Chemistry in Relation to Hygiene

Work on the production of precipitated toxoids has been carried forward under the direction of Dr. P. J. Moloney. The objective has been the preparation of a toxoid which would not induce anaphylaxis in sensitive guinea-pigs and would possess other advantages over the usual forms of precipitated toxoid. The preparations have been used clinically and observations made through field studies. This work has been carried forward with the co-operation of Dr. Donald T. Fraser. Studies of tetanus toxoid have also been made and purified precipitated tetanus toxoid has been successfully prepared. In these studies, Dr. Moloney has been assisted by Dr. Edith Taylor. Mr. M. D. Orr, who conducted studies in this field with Dr. Moloney, has, since the commencement of the war, had the responsibility for the preparation of the large quantities of tetanus toxoid required for use in the Canadian armed forces.

Farm Section

Under the direction of Mr. M. D. Orr, who is in charge of the Farm Section of the Laboratories during the absence of Dr. N. E. McKinnon, every effort has been made to meet requirements of the war, both in regard to production of products and research. This work has required a considerable increase in personnel and extensive alterations to laboratories as well as the installation of new equipment. The number of horses under immunization is the largest in the history of the Laboratories.

In this work, Mr. Orr has been ably assisted by Dr. J. M. Corkill, Dr. E. G. Kerslake, Dr. R. C. French, and Dr. Arthur Charles. Dr. Corkill has carried forward the preparation of various antigens required in the production of serums and has conducted a number of special studies. Dr. Kerslake has directed the immunization of all animals and is responsible also for veterinary supervision of small animal colonies. Dr. R. C. French has been most successful in the production of antitoxins, particularly as relating to their concentration by a special digestion process. During the year, further evidence has been supplied from hospitals and physicians that antitoxins prepared by this process possess definite advantages over those prepared by more usual methods. In developing this work, continued research is necessary and Dr. French has made substantial contributions to the newer knowledge of this subject. Dr. Arthur Charles, with Mr. L. B. Jaques, has been responsible for the preparation of heparin and for associated research studies. Mr. Jaques, in addition, has been investigating vitamin K.

Library

Excellent services have again been rendered by the Librarian, Miss Olga Somerville, and her assistant, Miss K. Pichler. The Library now has 2,705 bound periodicals and 1,212 monographs. Seventy-nine current journals are provided. The section of reprints as well as the section of reports is highly important. The first volume (no. XII) of the *Studies* of the Connaught Laboratories published since the death of the late Dr. J. G. FitzGerald was issued as a memorial volume. An outline of his life and work was presented. Included in this tribute were resolutions of appreciation passed by the Board of Governors, the Connaught Laboratories Committee, and the International Health Division of the Rockefeller Foundation.

Western Division

The work of the Western Division has again been carried forward with great success by Dr. C. E. Dolman. Since its inception six years ago, work has been conducted in quarters supplied by the Department of Bacteriology and Preventive Medicine of the University of British Columbia. The staff has numbered five, consisting of two medically qualified research workers and three technical assistants. Dr. Dolman has been assisted by Dr. L. E. Ranta who joined the staff last year. Dr. Dolman also serves as Professor and Head of the Department of Bacteriology and Preventive Medicine and as Acting Head of the Department of Nursing and Health. Dr. Ranta has served as Assistant Professor of Bacteriology and Preventive Medicine and Lecturer in Nursing and Health. These teaching appointments have assured a very close integration of the activities of the two university departments named with the work of the Western Division. Dr. Dolman is also Director of the Laboratories of the Provincial Board of Health. The very serious lack of space and facilities for the Western Division and for the Department of Bacteriology and Preventive Medicine has become even more acute during this year. In last year's report, the plan for the adequate accommodation of the Laboratories of the Provincial Board of Health and the several teaching departments referred to, as well as the Western Division of the Connaught Laboratories, namely, the erection of a new building on the university campus to be known as the Institute of Preventive Medicine, was outlined. Although the plans have been prepared and the funds voted by the provincial Legislature, it is unlikely that the project will be undertaken until the close of the war. In the meantime, the difficulties associated with the proper conduct of the work continued to increase. Important contributions have been made in research by Dr. Dolman and Dr. Ranta. A study of the survival of *S. typhi* in Canadian cheddar-type cheese has been made and the findings have formed the basis of important recommendations regarding the marketing of cheese.

During most of the year, Dr. Dolman had the assistance of Mr. Marvin Darrach who worked under his direction aided by a grant from the Associate Committee on Medical Research, National Research Council of Canada, in a study of staphylococcus toxins. This work formed the basis of a thesis presented by Mr. Darrach for a Ph.D. degree in Biochemistry at the University of Toronto.

The classification of strains of various types of Salmonella has been conducted by the Western Division. To date, 125 strains have been received for typing. This work is part of an international study.

Investigation of methods of preparation of vaccine for the prevention of cholera has been one of the major undertakings. Satisfactory progress has been made and it is now possible for the Connaught Laboratories to prepare this vaccine if the need arises for its use in the armed forces.

As in past years, Dr. Dolman has given generously of his time in meeting the requests for assistance from hospital authorities, medical practitioners, and local public health agencies. The Western Division is fulfilling a very important function in encouraging the development in Western Canada of well-trained bacteriologists who have acquired a research attitude during their training, through the enlistment of graduate students during the summer months.

Distribution of Products

The total volume of products distributed was the largest in the history of the Laboratories. One important new product, namely, the combined vaccine for protection against typhoid and paratyphoid fevers and tetanus, was introduced, to which product reference has already been made. The list of products now numbers thirty-four. It has been the privilege of the Laboratories to supply the requirements of the armed forces for tetanus toxoid and for the new combined vaccine as well as to supply large quantities of typhoid-paratyphoid vaccine, smallpox vaccine, and other products. Expressions of appreciation of the quality of the products have been received from the Director-General of Medical Services and members of his staff. In co-operation with the Department of National Defence and the Provincial Department of Health of Ontario, studies of field problems relating to the control of communicable diseases in the armed forces were made. To provide for possible emergency needs in Great Britain or in the Dominions, as well as to provide adequately for the Canadian armed forces, every effort has been made to establish reserves of products. In consequence, additional personnel, extensive alterations, and considerable new equipment have been necessary.

Staff Changes

Three of our most senior members, Dr. N. E. McKinnon, Dr. M. H. Brown, and Dr. D. L. MacLean, enlisted early in the war and are serving overseas. Promotions and appointment to special duties give evidence of the valuable services which they are rendering. From numerous sections of the Laboratories, members are now serving in the armed forces. A number of vacancies are being filled by women. When it is remembered that the staff of the Laboratories was largely composed of young men, particularly in the Farm Section, it is not surprising that the Laboratories have been faced with an acute problem. The difficulty of obtaining and training new personnel, and providing transportation to the Farm Section, together with necessary lunch-room and other facilities, is very real.

The resignation of Dr. C. H. Best as Associate Director upon his assuming appointment as Director of the Banting and Best Department of Medical Research has been received with keen regret. Fortunately, however, his connection with the Connaught Laboratories dating from nineteen years ago remains unbroken in view of his appointment as an Honorary Consultant to the Laboratories.

Several important changes in the administrative staff of the Laboratories were made. Mr. F. Lorne Hutchison, who assumed the duties of Comptroller when he joined the Laboratories in 1925, was promoted to be Assistant Director, being succeeded in the office of Comptroller by Mr. K. E. Allen who had been associated with Mr. Hutchison as Accountant since 1932 and also as Assistant Comptroller since 1939. Mr. I. W. Boyd, who had served as Assistant Comptroller since 1931, was appointed Superintendent. The creation of this new office in the Connaught Laboratories was deemed expedient in view of the large increase in the work for which Mr. Boyd has been responsible, namely, maintenance and purchases. Mr. W. P. Gerald, formerly Assistant Accountant, was appointed Accountant.

During this year in which particularly heavy responsibilities have been placed upon the Connaught Laboratories, I wish, on behalf of my colleagues and myself, to express thanks to you, to the Chairman of the Connaught Laboratories Committee, and to the other members of the Committee for hearty support which has meant so much in the conduct of this year's work.

R. D. Defries

REPORT OF THE ACTING WARDEN OF HART HOUSE

The Warden

For the past year the Warden, Mr. J. B. Bickersteth, has been in England engaged in special work at Canadian Corps headquarters. When he returned to Canterbury in the spring of 1940 he joined the Home Guard, in which he served during the summer. In September, Lieutenant-General A. G. L. McNaughton asked him to make a survey of the educational requirements of

Canadian troops for the coming winter. When this report had been considered by General McNaughton and a committee, Mr. Bickersteth was requested to remain to assist in the carrying out of the programme which resulted from it. He had a difficult decision to make. Should he return to Hart House or remain in England? He remained. In December his leave was extended for the balance of the academic year in order to enable him to continue with this important work.

The War

During the summer of 1940 and previous to the opening of the 1940-1 term, Hart House was the distribution centre for several hundred British children, destined for Ontario, evacuated from England under the British government scheme. Lodged in University residences, they took their meals in Hart House and used its many facilities for recreation. The Deputy Minister of Public Welfare, whose task it was to turn the children over to their foster parents, set up a temporary office in the reading room, and the map room was the headquarters of the I.O.D.E. volunteer helpers. In September, Canada entered the second year of the war. It was evident that the undergraduates would be required to give much of their time to Military Training both in the Canadian Officers' Training Corps and in the University of Toronto Contingent C.O.T.C. Training Centre Battalion. The committees of Hart House therefore at their first meetings considered the advisability of attempting to carry on all the activities of former years and it was agreed that as far as possible the usual programme should be arranged and experience would decide whether any part of it should be cancelled. Sunday Evening Concerts, Friday and Informal Recitals, and fortnightly exhibitions in the art gallery took place throughout the year although in most cases there was a marked decrease in attendance. Debates, however, were suspended as in the first year of the war and only one Sunday Evening Songster was held.

The Prayer of the Founders refers to the training in arms of the young soldier in the last Great War and once more Hart House was called upon to take its part. Every effort was made to assist the C.O.T.C. The Training Centre Battalion required a central location for their Orderly Room and they were granted the use of the reading room for this purpose, which has proved to be an ideal arrangement. The golf room became an armoury. Medical examination of the men took place in the graduate locker rooms and the adjacent art gallery. The theatre, gymnasium, and other rooms in the House were used on many occasions for lectures and drill and in the graduate dining-room a table was set aside for the C.O.T.C. Officers' Mess. The privilege of membership in the House was extended temporarily to a number of military groups. These were the Royal Norwegian Army and Naval Air Force, a group of Naval Officers in training, and ratings of a Navy Technical Class. Under the direction of Professor G. H. W. Lucas, Captain of the Hart House Revolver Club, instruction in revolver shooting was provided for a number of Naval, Army, and Air Force officers. Through the War Services Committee of the Central Y.M.C.A., men of the Canadian Forces in Toronto were invited to come to the House on the monthly Visitors' Days, and tickets were issued for Sunday Evening Concerts. On May 23, after the close of the spring term, five hundred men of the Royal Canadian Air Force began a three months' course in Radio Mechanics in the Department of Physics. They were quartered in University residences and the facilities of Hart House were put at their disposal. All meals were served to them in the Great Hall; the tuck shop was operated as a canteen for their exclusive use; the reading-room was arranged for reading and writing and they also had the use of the locker-rooms, showers, and swimming pool.

General

Undergraduate and senior membership, which had begun to drop off with the declaration of war in 1939, showed a further decrease this year. The undergraduate membership (excluding summer members) was 3,560 and senior membership (including faculty and graduate) was 626. This made a total of 4,186, being 207 less than last year's figure. The Great Hall experienced a very satisfactory year of operation in spite of the fact that attendance for regular meals showed a slight decrease. This decrease was somewhat offset, however, by the meals served to ratings of the Navy Technical Class. Many dinners, dances, and other functions were held, including the Hart House Committees dinner, the All University Fall dance, the first annual Medical dinner, University College Follies, the Faculty of Forestry dance, the Warden's Christmas dinner for 130 men students unable to return home for the holidays, the Christmas party for 290 men and boys of the University Settlement, the St. Michael's College At Home, School Nite, the Canadian Officers' Training Corps ball, the Aerial Navigation dinner, *The Varsity* Staff party, the University College Alumni Reunion dinner, and the Graduation ball. Five dietitians took advantage of the opportunities offered by the seven months' course in food administration inaugurated in 1938-9.

Art

The series of fortnightly exhibitions in the art gallery had an unusual beginning this year in the showing of work done by British children. During their temporary residence in the University a class was organized by Mr. John Barnes, a former secretary of the Art Committee. The drawings were highly imaginative and showed a strong influence of the war. In September, paintings by Charles F. Comfort were hung and other artists whose work was shown were Franz Johnston, L. A. C. Panton, the Society of Canadian Painter-Etchers and Engravers, John Hall, E. B. Cox (wood carving), Marion Scott, Mabel Lockerby, and Kathleen Morris. For a week in November a group of etchings by Goya, known as "Los Desastres de la Guerra," were shown together with drawings of Canadian War Memorials. Other exhibitions were the Undergraduate, the Senior Members', and the work of students in the Department of Architecture and the Department of Fine Art. The exhibition of the Hart House Camera Club was composed of prints of great variety and interest. There were 184 entries in all, 91 of which were hung, and in addition a number of colour transparencies. A one-man show of photographs by Randolph Macdonald followed for two weeks. Throughout the winter many informal discussions on art took place in the gallery and during the period that the exhibition by the Society of Canadian Painter-Etchers and Engravers was on view a member of the Society gave an interesting talk on the different processes. In April the work of the Art Class was hung. Much credit is due to Mr. Caven Atkins, the Director, for all that he accomplished during a difficult year. Thirty members, both undergraduate and graduate, joined the class in November but many were unable to attend regularly because of the long hours devoted to Military Training. Nevertheless the exhibition, which comprised drawings from life, using multicoloured chalk on black, white, and brown paper, created a striking effect and was one of the outstanding events of the year. Unfortunately the arts and crafts group had to be discontinued as those who desired instruction were unable to find a time when all could meet. During the months of December and January, five pictures from the Hart House collection were lent on request to the Art Gallery of Toronto for inclusion in exhibitions of the work of Canadian artists.

Music

Sunday Evening Concerts in the Great Hall continued to attract large audiences. The first was given by the Hart House Quartet, followed by the two pianists, Elsie Bennett and Madeline Bone, George Lambert (baritone), the Choir of the Church of St. Mary Magdalene (conducted by Dr. Healey Willan), the Joyce Trio, Zara Nelsova ('cellist), Margaret Parsons (pianist), and the Hart House Glee Club. Friday Recitals, however, did not receive the support of other years. The undergraduates were no less keen, in fact they would hear of no cancellation of the series. But the hour at which they were held conflicted with Military Training and although the attendance was only half that of 1939-40 the Music Committee could determine no other time that would improve the situation. In addition to this, there were greater difficulties this year in obtaining the services of artists. Hart House was fortunate, however, to be able to arrange programmes by such well-known musicians as Viggo Kihl, Eugene Kash, Reginald Godden, Zara Nelsova, Wilma Stevenson Dohler, William Morton, and Clifford Poole, as well as by a number of talented younger artists. A most unusual programme was that of thirteenth-century and Elizabethan music arranged by Mr. Leo Smith. The Hart House viols were used and Captain T. R. C. Goff assisted with his clavichord. Early in the year it was decided to discontinue Sunday Evening Songsters. So great, however, was the disappointment of those interested that one took place on December 1, under the direction of Mr. J. Campbell McInnes. Informal recitals, given by undergraduates at the noon hour, grew in number and popularity this year. Seven took place at intervals of approximately two weeks and one student played an entire programme of his own compositions. Friday Sing Songs were conducted weekly from November to March by Mr. Ross Workman and enjoyed by large numbers. Owing to the war, the Glee Club suffered a loss in membership but was not deterred by this handicap. In spite of fewer members, Dr. Peaker's inspired leadership spurred the men to greater efforts. In December, for the third year in succession, they broadcast a programme of carols over a coast-to-coast network of the Canadian Broadcasting Corporation, from the Great Hall one day at lunch. In February they gave a concert in the Scottish Rite Cathedral in Hamilton in aid of the Red Cross, and the performance given at the final Sunday Evening Concert of this year's series was the finest in the history of the Club. Once again the Music Committee assisted with student tickets and ushering for the fourteenth annual performance of the Bach St. Matthew Passion. Convocation Hall was completely sold out a week in advance of this function. With the advice of Sir Ernest MacMillan and other qualified persons, a number of volumes of music were purchased for the use of those members, who, as serious students of the piano, are permitted to use the Steinway in the music room.

Library

Contrary to expectation, the library was used to an even greater extent this year. About seventy-five new books were added to the collection and there were few losses. Two library evenings were held with Dr. Jacob Markowitz, of the University staff, and Mr. J. Robertson Davies, of *Saturday Night*, as guest speakers. When the reading room became an orderly room for the Training Centre Battalion, the periodicals were removed to the map room and additional seating accommodation provided there. Some thirty-five magazines were available to members. Early in the fall, Hart House received a most valuable gift, the original manuscript of the late Lord Tweedsmuir's last novel. In a letter, which accompanied the manuscript, it was stated that "Lady Tweedsmuir feels that the late Governor-General would like to have one of his manuscripts in Hart House, which does so much good for the youth of the University of Toronto." The book was published in March, in England and Canada under the title of *Sick Heart River* and in the United States under the title of *Mountain Meadow*. Copies of these two volumes, together with the manuscript, were displayed during March and April in the private press bookcase.

Debates

At the opening of term the Debates Committee reconsidered the question of the suspension of debates in Hart House during war-time and it was agreed to continue this policy.

Graduate Activities and Revolver Club

Despite the fact that many senior members of Hart House are on active service and many more have been engaged during the past year in C.O.T.C. training, senior activities have been carried on successfully. The golf room was given up for an armoury and consequently there was no instruction in the game but other athletic activities were continued. The Revolver Club, now in its fifth year, increased its membership substantially and owes much to the able direction of the Captain, Professor G. H. W. Lucas. Officers of the Royal Norwegian Air Force, a small group from the School of Aviation Medicine (Manning Depot), and twenty-eight sub-lieutenants in the R.C.N.V.R. (taking a special course at the University) were given instruction in revolver shooting. The last two groups were under the direction of Dr. J. K. W. Ferguson and Professor G. H. W. Lucas of the Hart House Revolver Club. Improvements in lighting and essential safety devices were also installed in the range. The renovation of the graduate dining-room, begun two years ago through the generosity of the Massey Foundation, was completed and this room has attracted increasingly large numbers of graduates for luncheon. The Graduates ball, after being suspended for a year, was held again and met with the usual enthusiastic response.

Student Christian Movement

No permanent General Secretary was appointed to the Student Christian Movement this year and consequently the Associate Secretary, Mr. A. J. Coleman, took charge of the work. It was a busy year. A most interesting series of Wednesday noon hour addresses was arranged. In the fall the main theme was "Basic Convictions" and the speakers were Dr. W. C. Lockhart, Professor R. W. Angus, Rabbi Maurice Eisendrath, Dr. J. Arnup, Dean Riley, the Rev. W. Lyndon Smith, Andrew Brewin, Neil Morrison, and Robert Mackie. The theme in the spring term was "Your Job and God" and addresses were given by Canon R. A. Armstrong, Professor S. K. Jaffary, the Rev. Ramsay Armitage, Dr. J. H. Couch, Dr. J. R. P. Sclater, E. A. Corbett, the Hon. G. Hoadley, and B. K. Sandwell. A number of study groups were organized and some of these met from time to time at dinner in the Great Hall. Holy Communion was celebrated each month in the Chapel from October to March and, in the fall, Morning Prayers were said from 8.40 to 8.55 A.M. An outstanding visitor to the University during Federation Week was Mr. C. S. Tsai, formerly Secretary of the S.C.M. in China and lately on the staff of the British Movement. The office in Hart House was again the headquarters for International Student Service in Canada. During the year some assistance was given towards the support of a refugee student at the University and recently Mr. Dale Brown, a graduate of Yale, was appointed by I.S.S. to visit student internees and prisoners of war in Canada, in co-operation with the International Red Cross. Spring camp was held this year at Camp Onawaw near Huntsville with many students in attendance. Several prominent members of the Movement are now serving with His Majesty's Forces.

Theatre

Despite the additional time taken up by Military Training and other war work, the University dramatic groups had a very active and successful season. St. Michael's College, Victoria College, and Trinity College produced plays and the Victoria College Music Club presented its annual operetta. Under the auspices of the University Drama Committee seven plays were presented on Wednesday afternoons before Christmas. The University Drama Festival was again held in January, the Cody Award being given to Victoria College, and a highly successful University Theatre Night was held in February with the four Arts Colleges each presenting a one-act play. In addition to these, the annual revues such as the Victoria College "Bob," University College "Follies," "School Nite," and "Dentantics" were again produced this year. During the winter months the C.O.T.C. and the University of Toronto Contingent C.O.T.C. Training Centre Battalion held military lectures in the auditorium. Throughout the season, many plays and revues were presented by organizations outside the University and, through these, many thousands of dollars were raised in aid of various war charities. Mr. Willard Thomson resigned as manager of the theatre in the summer of 1940 and is now serving with the Canadian Army Overseas. Mr. J. E. Hozack took over the management this year and together with his staff has given the fullest co-operation.

Visitors

Among those who visited Hart House during the year were: Captain Hj. Riiser-Larsen (Norway), Sir Shenton Thomas and Lady Thomas (Singapore), Sir Howard d'Egville (London), Leonard K. Elmhirst (Devon, England), Thomas Greenwood (University of London), Eva Bouchard (Quebec), Senator Vojta Benes (Prague), Professor Herbert LeMay (Johannesburg), Rear-Admiral H. A. Sheridan (England), the Rev. Michael Coleman (London), Dr. Adolph Keller (Geneva), and His Royal Highness Crown Prince Olaf of Norway. In November, an honorary degree was conferred on the Governor-General by the University. Following the special Convocation, His Excellency the Earl of Athlone and H.R.H. the Princess Alice were guests of the President and Mrs. Cody at tea in Hart House.

Staff and Committees

In Mr. Bickersteth's absence the Comptroller, Mr. J. R. Gilley, was appointed Acting Warden and the Assistant Comptroller, Mr. W. R. Cowan, became Acting Comptroller. The Secretary, Mr. H. J. Sissons, and the Assistant Secretary, Mr. E. A. Wilkinson, gave unstintingly of their time and energy to the many duties which were added to their regular work. It was with sincere regret that Mr. Sissons's resignation was received in June. During the three years that he was a member of the staff he was tireless in his efforts to promote the interests of senior members and showed the keenest interest in the whole life of the House. He will be greatly missed. Faculty and graduate members, at considerable sacrifice this year, devoted much time and thought to the various committees. Without their help it would have been impossible to carry on. In the Warden's absence, Professor Wasteneys was appointed Acting Chairman of the Board of Stewards. Hart House is greatly indebted to him and to Dr. V. E. Henderson, Chairman of the Finance Committee, for their wise counsel. Early in the fall Dr. D. M. Tanner, Second Faculty Member of the Art Committee, accepted a commission in the Canadian Dental Corps and therefore resigned from the Committee. Dr. R. E. Haist kindly consented to fill the vacancy. Four undergraduate members of committees withdrew during the year on being called up for active service. In the spring, Mr. J. J. D. Brunke, Graduate Representative on the House Committee, left to take up a position in Washington in connection with war work and Dr. R. A. Cleghorn found it necessary to resign from the Art Committee. Hart House is grateful to these men for the contribution that they have made. The Acting Warden is deeply conscious of the whole-hearted support given to him throughout the year by the President of the University, senior and undergraduate members of committees, and all members of the staff.

J. R. Gilley

REPORT OF THE DIRECTOR OF THE UNIVERSITY HEALTH SERVICE (MEN)

This year there were more first- and second-year students examined than ever before, but the smaller number of seniors over last year's highest record brought down the total by only seven. This was due to the smaller number of seniors taking part in athletics on account of Military Training.

The results of these examinations were very satisfactory. The physical condition of a large majority of students is excellent, only twenty-one of them being unfit for some form of Physical Training. We have also examined a number of students for the Auxiliary Battalion with whom we are co-operating in various ways.

It will be noted that some students have disabilities which prevent their taking part in Military Training but do not prevent their taking the special classes provided for such cases in our Physical Training. They may also take part in swimming and some of the games and lighter forms of athletics provided for them.

Apart from a rather widespread but mild type of influenza, and quite a large number of cases of German measles, the health of the student body has been better this year than usual which, in our belief, is due to the regular out-of-door Military Training in which so many have taken part.

Examinations	
First-year students	994
Second-year students	755
Seniors	763
	2,512

There were also 19 re-examined by specialists.

Results	*Per cent*
Those found fit for regular Physical Training	94
Those having some disability requiring corrective or light exercises	4
Those unfit for Physical Training	2

Those unfit for Physical Training were exempted on account of:

Heart trouble	5
Infantile paralysis	3
Recent operations	3
Arthritis	2
Nephritis	1
Diabetes	1
Bronchiectasis	1
Chronic bronchitis	1
Pleurisy	1
Asthma	1
Injuries	1

There were 81 students enrolled in the special Physical Training classes for correction of postural defects and on account of certain disabilities, and 17 others temporarily on account of injuries or recent illness which prevented their taking the regular physical training classes.

The average height of our first year students is 5 feet 9¼ inches, and their average weight 145½ pounds, the same as last year. There are 141 first-year students 6 feet and over, with an average weight of 160¾ pounds. The average gain in weight during the first year at the University was four pounds, and the improvement in the physical condition of the second-year students is shown in the majority of cases, 33 per cent had their rating raised, while only 6 per cent had their rating lowered owing to illness or accident during the year.

As usual a lecture on Health Service work was given by the Director to the physicians taking the D.P.H. course at the School of Hygiene.

During the year a very large number of students came in for medical examinations, advice, minor treatments, vaccinations (147 this year), medical certificates, etc.

We are again indebted to Dr. Andrew Hunter, Professor of Pathological Chemistry, for undertaking the supervision of the urinalysis in connection with the physical examination of students. These examinations showed that 10.5 per cent of the students had albumin, and 6.4 per cent had sugar.

The number of cases of illness and accidents for which temporary absence from Physical Training and Military Drill was allowed was less this year than in previous ones.

Illness

Colds	121	Scarlet fever	2
Influenza	43	Chicken pox	1
Pharyngitis	16	Local infections	4
Laryngitis	4	Duodenal ulcer	2
Tonsillitis	2	Malaise	3
Sinusitis	5	Dental trouble	4
Pneumonia	1	Eye trouble	4
Bronchitis	4	Otitis Media	2
German Measles	20	Epistaxis	2
Mumps	3	Transfusions	10
	219		34

Operations

Appendicitis	4	Hernia	2
Tonsils	2	Cartilage of knee	2
	6		4

Injuries

Fractures	9	Lacerations	14
Dislocations	7	Contusions	13
Concussions	3	Abrasions	11
Sprains	35	Blisters	7
	54		45

Skin Diseases

Eczema	5	Ringworm	6
Impetigo	3	Boils	8
Pityriasis	1	Scabies	2
	9		16

TOTAL.......... 387

This year we have lost four of the physicians from our medical examiner's staff as they are now doing military duty. Colonels Hassard, Park, and Sparks, and Captain Black have all done excellent work as examiners during the past nineteen years and deserve our very best thanks. Colonel Duncan Graham, Professor of Medicine, has arranged for very capable substitutes during their absence.

The co-operation between the Health Service and the Athletic Association in regard to emergencies due to injuries, etc., is most satisfactory. Dr. Stuart Thomson, engaged by the Athletic Association, in the absence of Dr. Gossage who is now overseas, attends to most of the cases at the Surgery in Hart House, while Dr. Roy Thomas and Dr. Lewis attend to the others at the General Hospital.

G. D. PORTER

REPORT OF THE MEDICAL ADVISER FOR WOMEN

This Department records an extremely busy year since about three thousand visits were made to the office for one reason or another. Dr. Jessie McGeachy was added to the staff in September and rendered valuable and much needed assistance throughout the year.

Physical Training is available to all first year women students registered in University College and the Faculties of Medicine, Household Science, and Applied Science. One hundred and ninety-five such students were examined in the early fall; 94 per cent of these were physically fit for exercise of all kinds, 55 per cent being in first-class physical condition, the remaining 39 per cent having minor easily remedied defects; 2 per cent suffered from heart or other organic disease and would never be able to participate in exercises. Another 4 per cent were considered unfit at the time of examination and most of these were under the care of their own physicians.

Students registered in the upper years of University College, Medicine, Household Science, and Applied Science; in all years of the federated colleges in Arts; and the various courses in the University Extension, Graduate Studies, School of Nursing, and College of Education, were examined during the year to the number of 636; some 63 students in both years of the Margaret Eaton School were also examined; 37 students were re-examined during the year because of abnormal findings when they were first seen.

One hundred and twenty-six of the above students were members of the graduating year. This practice of being examined before leaving college is growing and is most gratifying.

As in previous years the tuberculin test was considered a part of the routine physical examination, wherever possible. Two tests were carried out and all positive reactors had X-rays of the chest.

I should like to express my thanks to Dr. Elizabeth Stewart of the Women's College Hospital and to Dr. Richards of the Toronto General Hospital for their kindness in taking and interpreting these plates for us.

A total of 912 tuberculin tests were done on 416 students. Positive tuberculin tests were found in 28 per cent of our first-year students and although several were watched during the year as "suspicious" cases and X-rayed again before the close of term, no active cases of tuberculosis were found.

More than 230 were examined for sports during the year and 170 urinalyses were done. Twenty-nine students were vaccinated against small-pox, and a few Dick and Schick tests done, and about ten students immunized against diphtheria.

During the final examinations in April and May 26 students wrote a total of 34 papers in the Medical Adviser's office. These students were considered too ill to write their examinations in the usual manner.

Throughout the year there were more than one thousand consultations with students for injuries, illnesses, and individual problems of all kinds.

A course of three lectures in matters pertaining to health was given to the first-year students taking Physical Training, and a course of lectures on physical examination and diagnosis was given once weekly in the last trimester to the fourth-year students in the diploma course in Physical Education.

I would like to emphasize again this year what a small percentage of women in the University may take Physical Training and of the difficulties in obtaining facilities for recreation or sports for the remainder of the students, particularly those not registered in any of the federated colleges in Arts. This has been helped somewhat by the University detachment of the Red Cross, but there still remains a great need for further opportunity for supervised recreation and training.

Physical Examinations, 1940-1

University College:	First year	168	
	Second year	42	
	Third year	51	
	Fourth year	37	
		——	298
Victoria College (all years)			55
Trinity College (all years)			53
St. Michael's College (all years)			4
Medicine (all years)			19
Applied Science and Engineering (all years)			6
Optometry			2

Household Science (all years)		29
Physical Education (all years)		34
Social Science (both years)		21
College of Education and Library School		8
Graduate Studies		6
Occasional students		1
Occupational Therapy (both years)		94
Physiotherapy (both years)		72
School of Nursing: Undergraduate	53	
Graduate	76	
	—	129
		831
Margaret Eaton School		63
Total		894

Jean F. Davey

REPORT ON ATHLETICS AND PHYSICAL TRAINING (MEN)

In this report I have endeavoured to cover all the activities that come under the immediate control and supervision of the Athletic Directorate of the University of Toronto Athletic Association.

Physical Training

The year has been an unusual one owing to the suspension of intercollegiate athletics for the first time in twenty-two years. It was also necessary to provide Physical and Military Training for those students in the third and higher years under military age, in addition to the requirements for the first- and second-year men. It was gratifying to find our organization was able to cover all these activities and still more gratifying to find the loyal co-operation on the part of the student body. It was also possible to grant a limited number of credits for those students participating in intramural competition who, at the same time, were training with the Training Centre Battalion. The results were satisfactory alike to the officers of the Battalion and to the Intramural Sports Committee.

There were seventeen classes held each week, part of the work consisting of elementary Military Training and the balance in Physical Training based on the Danish School of Gymnastics. In the fall term and as long as weather permitted, the majority of classes were held out-of-doors, the work being devoted largely to foot drill and rifle drill. The instructors, Messrs. Martin and McCutcheon, had qualified for lieutenant's rank and with Mr. Stevens appeared in uniform. The indoor Physical Training classes were under the direction of Mr. Charles Zwygard, and Mr. Hector Phillips looked after the corrective work. In the spring term the syllabus included bayonet fighting, squad drill, rifle drill, Bren gun and miniature range practice. Mr. Martin was assisted by Sergeant Major Andrews and Staff Sergeant Porter from the C.O.T.C. The average attendance at these classes was 75.

The freshmen swimming tests, which had proved so successful last year, were again conducted and all first-year men unable to swim were enrolled in learn-to-swim classes. Of 917 students examined, there were 155 unable to swim; 11 classes per week were organized with an enrolment of 186 which included 31 second-year men and of these, 170 were taught to swim. The life-saving course was divided into two years, in the first year 102 being enrolled and in the second year 27. Examinations were conducted from March 19 to April 15 at which 74 attended and 61 passed the tests. It is the hope of this Department that in time every undergraduate going through the University will have learned to swim and obtained a knowledge of artificial resuscitation and life saving.

In the special classes for those suffering from temporary or permanent unfitness 66 were enrolled; 27 others were exempted on medical grounds.

Enrolment was as follows:

Men students in the first and second years	1,806	
From third and fourth years	105	
		1,911

From this total must be deducted those:

(*a*) With credit for two years' Physical Training but repeating academic work	19	
(*b*) Exempt on medical grounds	27	
(*c*) Exempt as members of religious orders	43	
(*d*) Withdrawn from college during the session or registration cancelled	29	
(*e*) Failed to register	18	
		136
		1,775

These 1,775 students took their Physical Training as follows:

In Physical Training classes		998	
In the Canadian Officers' Training Corps		261	
In the Training Centre Battalion		497	
In special classes for those physically deficient		66	
In the following Interfaculty Sports (part-time):			
Rugby	108		
Soccer	52		
Track and harrier	48		
Lacrosse	35		
Volleyball	116		
Boxing, wrestling and fencing	55		
Swimming and water polo	74		
Baseball	97		
Basketball	131		
Hockey	115		
Gymnastics	20		
Figure skating	19		
Jiu jitsu	13		
		883	
		2,705	
Less those participating in two or more activities		930	
			1,775

Athletics

At the beginning of the session it was announced that representatives of the Canadian universities had, after consultation with the Board of Reference of the Canadian Intercollegiate Athletic Union, decided on the suspension of intercollegiate competition for the year and that arrangements had been completed with the Department of National Defence to arrange for the Military Training of all students who would come under the class to be called up for thirty-day training under the Act. In addition to this the universities undertook, where possible, to give a certain amount of Military Training to students of the ages of 18 to 20 who were not included in the Act. It was therefore essential to look to our intramural programme for the necessary recreation for the male students. It was again worthy of note that our very extensive set-up was adequate to provide necessary competition and recreation for the student body. This will readily be understood by the table given below which shows that 1,823 individual students i.e., 51.8 per cent of the eligible student body participated in 580 games; 35 additional teams were entered making a total of 181 teams. The largest number of games played was in basketball where 40 teams played 130 games, setting a new intramural record.

The T. A. Reed Trophy for high points was again won by the Faculty of Applied Science, with University College second and Aerial Navigation third.

The Intramural Sports Committee, which efficiently handled the programme, met weekly under the presidency of Mr. W. R. Wilson, Victoria IV, until Christmas when he went on active service with the R.C.A.F. He was succeeded by Henry L. Aboud, Trinity IV. Mr. J. E. McCutcheon again gave valuable assistance and guidance as secretary of the committee.

Series	*Name of Cup*	*Winner*	*Interfaculty teams*	*Players*
Rugby	Sir William Mulock	Jr. and Sr. S.P.S. (tied champions)	10	251
Sr. track	W. L. Rowell Memorial	O.C.E.	..	55
Jr. track		S.P.S.	..	99
Relay track		O.C.E.	..	27
Sr. harrier	J. Brotherton	S.P.S.	..	66
Jr. harrier		S.P.S.	..	97
Soccer	Arts Faculty	Knox and Med. (tied champions)	10	174
Hockey	W. T. Jennings	Jr. S.P.S.	24	335
Basketball	Clifford Sifton	O.C.E.	40	410
Box lacrosse	Dr. W. A. Dafoe	Sr. S.P.S.	14	177
Sr. boxing, wrestling and fencing	Francis Davidson	S.P.S.	..	35
Jr. boxing, wrestling and fencing		S.P.S.	..	39
Indoor baseball	A. G. Spalding & Co.	O.C.E.	24	344
Swimming league		Jr. S.P.S.	15	159
Sr. swimming	A. M. Fitzgerald	U.C.	..	26
Jr. swimming		S.P.S.	..	71
Ind. swimming	Durnan	G. H. Clawson, U.C.	..	10
Water polo	H. P. Eckardt	Sr. Med.	12	125
Indoor track	Toronto Cricket Club	Victoria	..	49
Tennis: Team	Victoria Tennis Club	S.P.S.	..	66
University champion	F. Y. McEachren	B. W. Hall, Emman.	..	..
Sr. gymnastics	H. A. Wilson	Victoria	..	9
Jr. gymnastics		S.P.S.	..	10
Volleyball	Victoria Staff	Dent 'A'	32	364
Golf		S.P.S.	..	108
Badminton		U.C.	..	28
Squash racquets		St. M.	..	36
Skiing		S.P.S.	..	46
Jiu jitsu		......	..	16
Figure skating		......	..	25

Total number of registrations	3,257
Plus participants in inter-fraternity and inter-residence competition	614
	3,871
Less those participating in two or more sports	2,048
Number of individual contestants	1,823

Athletic Nights

To compensate the students in some measure for the loss in intercollegiate competition during the winter season, Mr. Stevens organized a series of six athletic nights held on successive Saturdays. Each evening was sponsored by one of the larger faculties or colleges with special features. There were basketball games, diving exhibitions, and swimming displays by both men undergraduates and co-eds.; exhibitions of box lacrosse, gymnastics, volleyball, and table tennis by Ontario champions. St. Michael's College sent their excellent orchestra. The Medical Faculty gave blood grouping tests and their famous two-piano team. Applied Science put on a demonstration of chemical magic. In the smaller Gymnasia individual games were set up and from 10.15 to 11.45 popular music was played in the big Gymnasium, while in the upper Gymnasium square dancers held sway. The average attendance was close upon a thousand people and the entire proceeds, after incidental expenses were paid, were devoted as follows: the British War Victims' Fund $597, the University Settlement $225, and the Toronto Military Hospital $50 to provide ear phones for bedridden patients. The large attendance of undergraduates proved conclusively the need for more gatherings of this sort where both men and women students can meet under University auspices in a healthy and pleasant environment.

Athletic Fee Advantages

The Varsity Arena and Outdoor Skating Rink were again busy centres during the winter term. All the Jennings Cup (intramural) hockey games were staged in the Arena and practice hours provided. The Outdoor Rink had a most successful season, there being over 40,000 paid admissions and free admission granted to 7,626 students. The Outdoor Rink also provided space for figure-skating classes under Mr. Zwygard where 67 students were given instruction during the months of January and February. Further appreciation of the fee is shown by student interest in other forms of activity. Last fall there was an attendance of 5,577 students at the rugby games of the city teams using the Stadium (free admission being provided by agreement with the respective teams). The four gymnasiums and swimming pool reported an attendance of 15,369 from October to May. Reduced green fees were granted by the Glen Eagles Golf Club to the extent of approximately 1,500, while the Glen Mawr Stables and the Old Mill Stables provided 823 reduced riding fees. Skiing is rapidly becoming one of our most popular sports and during the season there was an estimated attendance of 8,000 at the University ski trails and cabin west of Newmarket in King Township.

Varsity Arena

From May 1 to the middle of October, the Promenade Symphony Concerts under Mr. Reginald Stewart gave 24 concerts on Thursday evenings with an average attendance of 4,999, there being several capacity crowds of over 7,000. Also a concert was given by the Promenade Symphony Orchestra for the benefit of the Red Cross for which the Arena and its management was donated free of charge. In May of this year the management of Massey Hall staged an appearance of Leopold Stokowski, the eminent orchestral conductor, with his Youth Orchestra, a recent organization that has received great acclaim from all the leading cities of this continent. The closing exercises of the Bible Training College, a physical demonstration by Branksome Hall, demonstrations by the St. John Ambulance Brigade and the Boys' Brigade, together with the annual Frolic of the Optimist Club to raise funds for work among the under-privileged, were among the organizations provided with the facilities at a nominal cost. An outstanding feature was the annual concert of the Ontario Educational Association in Easter week where, for the first time in many years, a chorus and orchestra consisting of high-school pupils throughout the province presented an attractive programme. The chorus consisted of 1,000 singers and the orchestra of 200, the personnel being entirely of children. The Arena also provided for capacity gatherings for the Zionist Council to greet the great Dr. Chaim Weizmann, President of the World Zionist Organization (and incidentally the discoverer of acetone for which he received recognition from the British government), and for a mass meeting of the Polish citizens under the auspices of the Friends of Poland to meet General Sikorski. It is a matter of gratification that the University possesses a building adequate enough to accommodate such gatherings, there being only one other building in the city of greater seating capacity.

Athletic Directorate

The Athletic Directorate for 1940-1 consisted of Dr. J. A. McCollum (*President*), Professor S. Beatty, Dr. W. Easson Brown, Dr. W. A. Dafoe, Messrs. H. A. MacMillan (*Vice-President*), W. Harold Brown, D. G. Finlayson, O. P. Prichard, W. D. Ramore, T. E. Stephenson and, *ex officio*, Dr. G. D.

Porter, Medical Director, Warren Stevens, Director of Physical Education, and T. A. Reed, Financial Secretary.

It is with regret that we record the retirement of Dr. G. D. Porter, Medical Director, who, for the past nineteen years, has looked after the health of the male students and has given generously of his time and ability to advise the Directorate on many matters of which he had intimate knowledge. A graduate of 1894 and an outstanding athlete in his undergraduate days, Dr. Porter has never ceased to take an interest in the athletic development of the University and the Directorate took this opportunity to present him with the coveted "Bronze Shield," ordinarily awarded only to students who distinguish themselves on the playing field.

At the beginning of the session Professor T. R. Loudon went on active service in the Royal Canadian Air Force as the head of the School of Aeronautical Engineering in Montreal and more recently was appointed Commanding Officer of the Test and Development Establishment of the Royal Canadian Air Force at Ottawa. During his absence his place on the Athletic Directorate was filled by Dr. W. A. Dafoe.

Former members of the Directorate now serving with the Active Service Forces are Dr. Charles Fenwick, Larry Skey, Dr. Al. Williams, Dr. Turney Williams, John MacGillivray, Don Carrick, Jock Maynard, Jock Pigott, Dr. Bruce Tovee, Walter McGregor, Dr. Frank Shipp, Dr. George Hendry, Dr. Jack Sinclair, Dr. A. E. Young, together with a large number of our Colour Athletes. From the staff of the Athletic Office, Mr. J. P. Loosemore joined the Navy and is now Sub-Lieutenant Paymaster at Halifax. W. D. King, his assistant, is Instructor and Sports Officer at the Brantford Training Centre.

It is with regret that we record the passing of Dr. J. C. Maynard, Med. 1914, who in his student days was a great football player and a member, as well as Vice-President of the Directorate; A. F. "Biddy" Barr, also an outstanding football player and coach in his graduate and undergraduate days; Dr. T. A. Russell, Secretary of the Association in 1898, 1899, 1900, who drew up the Constitution of the Athletic Association in 1902. It is significant that the same Constitution with some slight amendments is the one under which the Association operates today. All these good friends of the Association will be greatly missed for their continual interest in, and valuable advice to, the Athletic Directorate.

T. A. Reed

REPORT OF THE DIRECTOR OF THE DEPARTMENT OF PHYSICAL EDUCATION FOR WOMEN

During the academic year 1940-1 there were 243 women students registered in the Physical Education classes and approximately 680 class periods of instruction were given by the Director of Physical Education and her assistants, Miss J. M. Forster and Mrs. M. Graham.

Required Physical Training

The one-year required Physical Training class, with an enrolment of 210 students, was subdivided into 10 class periods a week. This plan, as formerly, assisted principally in accommodating the students who presented varied academic time-tables and it partly lessened the congestion in the one small gymnasium and overcrowded dressing-room quarters.

The students enrolled in the regular Physical Training and corrective classes were required to take the final tests in general gymnastics and corrective exercises at the end of the session. The annual report of these examinations including the class attendance results of the students was submitted to the Registrar of the University.

Corrective and Remedial Classes

Separate class periods of corrective exercises were specially arranged and given to the students who were medically advised to take the special course for their benefit and welfare. This essential part of physical health was personally supervised. When satisfactory results were attained it enabled the individual student to return to the regular Physical Training class before the end of the second term.

Number of students from—	
University College	182
Faculty of Medicine	17
Faculty of Applied Science	5
Faculty of Household Science	6
Victoria College	3
Trinity College	1
	214

Four Year Diploma Course in Physical Education (with the Pass Arts Course)

There were 23 students registered in this course and approximately 290 lecture periods in theory and 354 class periods in practical subjects were given during the college year.

The women graduates of the course who have been granted the diploma in Physical Education by the University of Toronto and proceeded to the Ontario College of Education for the teacher's qualification and certificate, continue to be appointed directors and instructors of Physical Education in the secondary schools of Ontario.

The New Course leading to the Degree of Bachelor of Physical and Health Education

There was an enrolment of 11 women students in the new course in Physical and Health Education.

Twenty lectures in the Theory of Physical Education and 110 periods of instruction in the practical subjects of the course were taken by the students in the Physical Education Department in the Household Science Building.

Swimming

There were 197 students from all colleges, faculties, and departments, and approximately 425 periods of instruction in elementary and advanced swimming and life-saving given by Miss Elizabeth Edwards during the session of seven months.

Number of students from—	
University College	73
Victoria College	27
Trinity College	10
St. Michael's College	1
Faculty of Medicine	7
Faculty of Household Science	3
Faculty of Music	1
School of Nursing	11
Physical Education Course	34
Administrative Staff	28
	197

Ivy G. Coventry

REPORT ON ATHLETICS FOR WOMEN

The intramural programme of the Women's Athletic Association has been carried out very much as usual for the year 1940-1, one of the most noteworthy features being the greatly increased participation of the students in Occupational Therapy and Physiotherapy because of the increased registration in these departments.

The sports programme again included tennis, basketball, badminton, hockey, swimming, bowling, and skiing. The tennis tournaments of the various colleges were held early in term and then the intramural tournament in which the six best players from each of the four Arts colleges and the Faculty of Medicine participated. Basketball followed and as usual proved to be the most popular of all sports with thirteen teams entered in the intramural series. All games except the finals in Hart House were played on the Ontario College of Education floor during evening hours, and in addition a few practice hours were available on the Victoria College Rink floor. In all, thirty-two games were played.

Recreational badminton is popular all through the year, but is largely played after Christmas on whatever courts are available. Approximately one hundred students used the St. Paul's Church courts which were rented for the week-day afternoons and in addition the St. Joseph's Convent courts were used by St. Michael's students and those of the Margaret Eaton School were made available to the nurses for two hours a week. The college tournaments were held in February and the intramural tournament in March brought the season to a close. The hockey series was very successful this year with University College winning the championship of the seven-team group from St. Hilda's after two well-played games in the Arena. The regular games were played either on the outdoor cushion on the Trinity field which was made available to the women by the men's Athletic Association or on the Victoria College cushion.

Swimming also had a successful year. A large number of students daily made use of the pool and took advantage of the coaching of Miss E. A. Edwards who this year succeeded Mrs. Nisbet as the swimming instructor. Meets were held by the various colleges and finally the two-night intramural-intercollegiate meet in Hart House. The innovation of a "correspondence" intercollegiate meet worked out very well in the absence of regular intercollegiate competition and Toronto maintained her unblemished record by again winning all events in competition with McGill, Queen's, and McMaster.

Bowling has become increasingly popular and this year over sixty students paid the extra fee required for competition in this sport. The Uptown alleys at Bloor and Yonge Streets were used but were not available for evening hours which, of course, works a hardship on students with laboratory periods in the afternoon. Some thirty women were registered for figure-skating instruction and a large number participated in golf and riding as well as open-air skating as provided under the Athletic Fee plan.

The various intramural championships were won as follows:

Sport	*Trophy*	*Winner*	*Competitors*
Tennis	Curlette Cup	Victoria	30 (5 teams)
	University Champion	Virginia Rappell, Vic. I	
Basketball	St. Hilda's Cup	Victoria College Seniors	157 (13 teams)
Hockey	Harston Cup	University College	82 (7 teams)
Badminton	University College Cup	University College	36 (6 teams)
	University Champion	Elizabeth Allen, U.C. II	
Swimming	Interfaculty Cup	University College	35 (4 teams)
	University Champion	Winifred Baxter, Phys. Ed. IV.	
Bowling	University Champion	Ruth Publow, Occ. Ther. I	62

When intercollegiate competition was abandoned for the men in the fall of 1940 due to the pressure of Military Training, the question of continued participation for the women immediately arose. The Directorate members were unanimous in the opinion that, if an opportunity for service training involving suitable physical exercise could be found, the women athletes would prefer to use their time, money, and energy for that purpose rather than for the continuance of intercollegiate sport. The formation of a uniformed Service Training Detachment under the Canadian Red Cross Corps seemed to provide exactly what was required and the President gave the necessary sanction and authorized the expenditure of a small proportion of Athletic Fee funds for the maintenance of such a Detachment. Registration was limited to 200 students of the upper years.

The training given involved three hours a week from October 15 to March 15 of which one hour at least was required for military drill. Other periods were devoted to lectures on elementary military organization and law, orderly room procedure, and the basic course, followed by an examination, in Civilian Defence (A.R.P.) organization as laid down by the Ontario government. Of the 168 members who tried this test, 163 passed successfully and are to receive the government certificate. It is anticipated that specialized courses will be available next year for this year's members as well as the basic courses for new members.

The Red Cross Corps is national in scope and its purpose is to provide a fully trained, disciplined, uniformed body of young women to be available individually or as a group for regular or emergency duty in the various forms of national service which may present themselves. The four sections, Transport, Nursing Auxiliary, Office Administration, and Food Administration, offer ideal fields of service for university-trained women, and it is hoped that many members of the University Detachment will continue in the Corps after graduation. The training received will also prove of great value to others, such as Occupational and Physiotherapists, who may be called overseas or become connected with military or civilian institutions in Canada. Undoubtedly the unselfish decision of the women athletes to give up intercollegiate competition for this year has been a source of satisfaction to themselves and to the many other women who have benefited by the training provided in its stead.

The Women's Athletic Directorate for 1940-1 consisted of Dr. C. C. Benson, *President*, Mrs. W. A. Kirkwood, Mrs. W. B. Elsley, Dr. Jean Davey, Miss J. M. Forster, and Miss A. E. M. Parkes, *Secretary-Treasurer*, as graduate representatives, and the Misses H. R. Annesley, W. Baxter, C. A. Bryans, R. E. Danard, J. E. Griffith, and R. A. McDonald, as undergraduate representatives.

A. E. MARIE PARKES

REPORT OF THE DIRECTOR OF THE DEPARTMENT OF MILITARY STUDIES

During the year 1939-40 offers of assistance in this Department were received from various members of the Faculty in other departments. Due to the calling up of the head of this Department on active service it was found convenient to accept some of the above offers, and grateful acknowledgment is hereby tendered to the following departments for conducting lecture courses:

Department of Law—Course in Military and International Law.
Department of Geography—Course in Military Geography.
Department of History—Course in Military History.
Department of Political Economy—Course in Military Economics.

To assist further in carrying the additional teaching load as indicated below, Brigadier-General G. S. Cartwright, C.B., C.M.G., former Director of this Department, was appointed Special Lecturer and took over much of the work in Military Tactics.

The above reorganization of the lecture courses occasioned some minor departures from the outline of the course as shown in the Calendar. This was carried out, however, without disrupting the sequence of the work of the senior years; and will necessitate further changes in future years.

The enrolment in all years was the largest in the history of the Department, being 40 per cent above the session 1939-40, and twenty-five times that of peacetime. In addition a considerable number of students in the Pass course for Teachers took Military Studies as one of their optional subjects.

Twenty-five undergraduates received Commissions in the Navy, Army, and Air Force before the completion of the academic year; and a large number of others expect to do so immediately after graduation.

The thanks of this Department are due to the Officer Commanding the University of Toronto Contingent of the Canadian Officers' Training Corps for the loan of much of the equipment used.

M. B. Watson

REPORT OF THE OFFICER COMMANDING THE UNIVERSITY OF TORONTO CONTINGENT CANADIAN OFFICERS' TRAINING CORPS

The task of the University of Toronto Contingent of the Canadian Officers' Training Corps was greatly increased during the session 1940-1 owing to the fact that in addition to the courses leading to Officers' qualification in the various arms of the service, the Board of Governors of the University required all physically fit male undergraduates of the University, eighteen years of age and over, to receive Military Training. Thus instruction was given to approximately 3,500 undergraduates and 425 graduates.

The organization consisted of three main divisions: (*a*) the Officers' Training Battalion, (*b*) the Training Centre Battalion, and (*c*) those men under twenty years of age on July 15, 1940—the eighteen- and nineteen-year group.

To conduct the necessary instruction, the Department of National Defence provided an administrative and training staff by calling out on active service (under G.O. 139) the following personnel: the Officer Commanding, Chief Instructor, Adjutant, Assistant Adjutant, and six other ranks; and in the Training Centre Battalion: the Chief Instructor, Adjutant, and two other ranks.

The Officers' Training Battalion

This battalion was organized this year on a basis of arms of the service rather than by faculties as was the case the previous year. The strength was nearly 1,500 at the beginning of the session 1940-1.

Enrolment was restricted to those who were on strength from the previous year, to undergraduates in their final year and to graduates. Those on strength numbered about 700 who had registered in a two-year course, 60 per cent of whom had passed the first paper "common to all arms" and were now ready to receive "special to the arm" instruction.

All new applicants had to pass a personal interview with a Board of Officers of the arm in which they wished to train before being taken on strength and agree to accept a commission in the C.A.S.F. or the N.P.A.M. if offered at the completion of the course. Preference was given to the former and an age limit of thirty-five years was set except for those having special qualifications. Over 400 graduates and 300 undergraduates were admitted under these conditions.

Once the tedious but necessary preliminaries had been completed the serious training was undertaken and this year all ranks of this battalion were in uniform. Training was carried out on Saturday afternoons and on one or two afternoons or evenings a week. The syllabus of training for each arm was in accordance with *How to Qualify* and the qualification was 2nd/Lieut. Reserve Force. As much practical work as possible was carried on out of doors during the good weather. The artillery practised gun drill. The engineers in collaboration with other arms constructed a trench system with barbed wire entanglements on a vacant lot, corner Hoskin Avenue and Devonshire Place. The signals, Infantry (Rifle) and Infantry (M.G.) conducted manœuvres in High Park and other suburban districts while the Army Service Corps conducted exercises with motor cars.

Written examinations in all arms as set and marked by the Department of National Defence were held in December, March, and August and the number who passed was quite satisfactory as shown by the following table (over 400 in the two-year course had passed the first paper the previous March):

Arm	*December, 1940*		*March, 1941*		*August, 1941*	
	1st paper	2nd paper	1st paper	2nd paper	1st paper	2nd paper
Artillery	198	48	1	119	2	15
Engineers	61	2	9	53	4	13
Signals	25	..	8	21	1	2
Infantry (R)	161	5	41	182	8	27
Infantry (MG)	99	..	12	106	1	9
A.S.C.	47	1	14	70	5	6
C.A.M.C. (Capt.)	116	1	12	126	..	..
C.D.C. (Capt.)	48	..	4	...	..	..
O.M.E. (Capt.)	31	..	..	...	..	..
Inf. (R) Capt.	...	..	..	...	1	..
	786	57	101	677	22	72

The *Lecture Notes* and the *Manual of Elementary Drill*, published by the University of Toronto Press in 1939, were revised and brought up to date. There was such demand for these publications throughout Canada that several reprints were necessary.

The annual inspection at local headquarters was conducted during the third week of February. Owing to the large numbers for the limited accommodation the inspection was conducted throughout the whole week, one or two arms being on parade each evening. Major-General C. F. Constantine, D.S.O., inspected the Infantry (Rifle) Companies and detailed members of his staff to inspect the other arms. Lieutenant-Colonel K. M. Holloway G.S.O.1, was present on all occasions.

The organization and principal officers were as follows:

HEADQUARTERS STAFF

Honorary Colonel	Colonel the Hon. H. J. Cody, E.D.
Officer Commanding	Lieutenant-Colonel H. H. Madill, V.D., m.s.c.
Chief Instructor and 2i/c	Major M. B. Watson, m.s.c.
Adjutant	Captain H. C. H. Miller
Assistant Adjutant	Lieutenant A. Ragen
Paymaster	Major T. A. Reed, E.D.
Quartermaster	Lieutenant C. A. Johnston
Medical Officers	Major J. L. McCollum, R.C.A.M.C. Lieutenant F. Preston, R.C.A.M.C.
Chaplain	Captain W. C. Lockhart
R.S.M.	R.S.M. (W.O. 1) A. Andrews

		Arm	*Company Commander*	*Strength*		
				At H.Q.		At Camp
A	Coy.	Arty.	Major C. Smyth	150	No. 1 Coy.	109
B	"	Arty.	Major G. F. Davies	164	No. 2 "	92
C	"	Eng.	Major H. W. Tate	167	No. 3 "	96
D	"	O.M.E.	Major W. E. P. Duncan	60		
		Sigs.	Captain G. T. Hodgson	57		29
E	"	Inf. R	Major B. E. Tolton	135	No. 4 "	104
F	"	Inf. R	Major W. E. Carswell	90		
G	"	Inf. R	Captain G. H. Horning	95	No. 5 "	133
H	"	Inf. MG	Lieutenant A. H. Cowie	101		
I	"	Inf. MG	Lieutenant J. F. Flinn	92	No. 6 "	126
K	"	A.S.C.	Lieutenant B. Wilkinson	126	No. 7 "	90
L	"	Meds	Captain J. W. Graham	160	No. 8 "	76
M	"	Dents	Captain R. M. Sparling	89		
				1,486		855

The Training Centre Battalion

The Training Centre Battalion was formed to conduct the training of those male undergraduates twenty years of age and over on July 15, 1940, who were not on the strength of the Officers' Training Battalion. The Commanding Officer is the Second in Command of the Contingent, Lieutenant-Colonel W. S. Wilson, E.D., and the officers are officers of the C.O.T.C. (and attached officers) posted to the Training Centre Battalion for duty.

During the summer of 1940, the government announced that all men within certain age limits were to receive thirty days' compulsory Military Training. This was later extended to four months and (for service in Canada) for the duration of the war. In order that students at the University might complete their courses, especially those taking courses in Science, Medicine, Dentistry, and Mathematics, the government gave authority for the postponement of the call to a training centre of an undergraduate until the completion of his course, provided he performed the required training in the C.O.T.C. In this battalion the same syllabus is followed as is laid down for the first thirty days at a training centre, and consists of squad drill, manual of arms, bayonet fighting, musketry, gas drill, route marches, lectures on field engineering, military law, organization, and other subjects valuable to the soldier. Fifteen days' instruction (computed at 110 hours) was conducted at local headquarters, on Saturday and two other afternoons a week, and the remaining fifteen days at camp during the summer.

The battalion was organized on a basis of six companies and wherever possible all members of a faculty were placed in the same company, which was found to be a very desirable thing.

Training was carried on out of doors whenever possible, and during bad weather lectures were given. The University Avenue Armouries was used every afternoon during the second term. The required amount of intramural training was completed March 15, 1941.

About 1,500 registered with the Battalion at the beginning of the term but through medical boards and withdrawals this number was reduced to about 1,200. Of these, about 601 went to camp.

All members of the Battalion were medically boarded and categories A, B, C1, and C2 were accepted for training during the winter. Categories A, B, and C1 only were taken to camp.

The Battalion went to Niagara Camp from June 8 to June 22 and those attending completed the remainder of the syllabus for thirty days' training and received credit for it.

The senior staff of the Battalion was as follows:

Officer Commanding.........	Lieutenant-Colonel W. S. Wilson, E.D.
Second in Command.........	Major W. S. Wallace
Chief Instructor............	Major G. R. Lane
Adjutant....................	Captain E. A. Macdonald

Company Commanders

O Coy......................	Major F. R. Crocombe
Q Coy......................	Captain C. R. Sanderson
R Coy......................	Captain M. Crabtree, M.C.
S Coy......................	Major W. J. T. Wright, M.B.E.
T Coy......................	Captain R. A. Barbour, M.C.
W Coy......................	Captain L. T. Hargreaves

The Battalion was organized as four companies at camp, with Major Crocombe acting as Paymaster and the companies were commanded by Captains Sanderson, Crabtree, Barbour, and Hargreaves, Captain Gordon Dalziel of the Queen's York Rangers was Quartermaster of the Battalion in camp.

Uniforms were not issued to the Training Centre Battalion for the winter training but both battle dress and fatigue uniforms were issued for camp.

The Battalion was inspected on February 24 at the University Avenue Armouries carrying out their regular syllabus of training by Major-General C. F. Constantine, D.S.O., the D.O.C., M.D. 2.

The Eighteen- and Nineteen-Year Group

Owing to numbers it was impossible to provide this group with the same training as given in the Training Centre Battalion. Consequently they received two hours' training a week in the periods allotted to Physical Training in the academic time-table. There has always been the closest co-operation between the Athletic Association and the C.O.T.C. Major and Paymaster T. A. Reed, E.D., the financial secretary of the Association, has been an officer of the Corps since 1915. This year it was particularly fortunate that three members of the Athletic Staff are also officers in the C.O.T.C., namely 2/Lieuts. W. Stevens, W. H. Martin, and J. E. McCutcheon. They were responsible for the Military Training of this group which in addition to squad drill and rifle exercises included firing on the Hart House Rifle Range.

Camp

Camp was held at Niagara-on-the-Lake, June 8 to 22, with a strength of 855 in the Officers' Training Battalion and 601 in the Training Centre Battalion. In the former, the practical instruction for each arm was carried out in accordance with the syllabus laid down in *How to Qualify* and the practical examinations were conducted by the staff of the District School.

In the latter the syllabus was that for the second half of the first thirty days' training.

Two ceremonial parades were held at camp. These were: (*a*) the inspection by the Inspector-General, Major-General T. V. Anderson on Tuesday, June 17, and (*b*) the inspection by the District Officer Commanding M.D. 2, Major-General C. F. Constantine, D.S.O., on Thursday, June 19. In both cases following the ceremonial the tent lines and kitchens were inspected and the regular syllabus of training was continued. We were honoured by the presence of Honorary Colonel and Mrs. H. J. Cody on the former inspection.

The Contingent returned from camp on June 22, the Training Centre Battalion arriving in Toronto at 1200 hrs. and the Officers' Training Battalion at 1400 hrs. Each Battalion marched with full equipment to the University Campus where they were reviewed by Brigadier-General C. H. Mitchell, C.B., C.M.G., D.S.O., his last public appearance before he died in August.

Appointments

One measure of the contribution being made to the war effort by the C.O.T.C. is the number of its members who have received appointments in the services. As members who have qualified proceed to various parts of Canada it is difficult to keep accurate statistics but it is known that at least 504 received appointments during the twelve months, July 1, 1940, to June 30, 1941. These were distributed by arms as follows:

Arty	106
Eng	59
Sigs	11
Inf. R	58
Inf. M.G	42
A.S.C	28
R.C.A.M.C	28
C.D.C	21
Ordnance	18
Armoured Corps	30
R.C.A.F	72
R.C.N.V.R	31
Members receiving appointments between July 1, 1940, and June 30, 1941	504

In addition 26 officers and 76 other ranks of the Training Centre Battalion went on active service during the year.

Memorial Service

The C.O.T.C. has always taken a prominent part in the memorial service on Remembrance Day. This year it was intended to hold the service in front of University College with both battalions on parade on the front campus. Owing to rain the service was transferred to Convocation Hall.

The Annual Ball

The Annual Ball of the Contingent was held in Hart House on Friday, February 21. The attendance was greater than on any previous year. One of the features of the evening was the first public appearance of the pipe band. Much credit for the success of the event should be given to Major W. E. Carswell, the perennial chairman, and his committee.

Bands

The C.O.T.C. brass band was very active throughout the session and had a membership of about sixty-five and was under the direction of Captain John Slatter. The band was most useful throughout the year, both during route marches and on regular parades.

A pipe band was organized early in the session under the leadership of Pipe Major J. Reid and, with some members having previous experience and other students who were most enthusiastic, a very creditable showing was made. The first money (over $200) to assist in equipping the band was turned over to the C.O.T.C. by the House Committee of Hart House and was part of the proceeds of the All University Dance. This was spent entirely on buying bagpipes. The amount was later supplemented by a very generous grant from the Students' Administrative Council so that the inauguration of the band was made possible by organizations outside the C.O.T.C. The pipe band is proving a most valuable asset.

Both bands went to camp, the brass band with a strength of twenty and the pipe band with a strength of nine, and added much to the enjoyment of the stay at Niagara.

Reviews

On October 19, both battalions were reviewed by Brigadier E. W. Haldenby, M.C., who took the 48th Highlanders to England in 1939 and returned to command the 9th Brigade of the Third Division. Brigadier Haldenby was a member of this Contingent in 1914 when he held the rank of Corporal.

Major-General C. F. Constantine, D.S.O., newly appointed D.O.C., M.D. 2, also reviewed both battalions on November 16. The review was preceded by a route march, the latter part of which took place in a snow storm.

Appreciation

The training of the Unit has meant a tremendous amount of hard work on the part of its members and undoubtedly has interfered in many cases with academic work.

Academic time-tables were adjusted when possible to meet the needs. Varying amounts of academic credit were given by the different faculties for Military Training according to the work taken and the requirements of each faculty.

Tribute is paid to staff and students for the excellent co-operation which has been displayed on every hand.

H. H. MADILL

REPORT OF THE SECRETARY-TREASURER OF THE STUDENTS' ADMINISTRATIVE COUNCIL

The Students' Administrative Council as always has, in 1940-1, been truly representative of student opinion and interests, being composed as it is of the undergraduate heads of the student governing body in each college, faculty, and department, the Editor and Women's Editor of *The Varsity*, and the Editor of *Torontonensis*. The two members of the academic staff, Professors S. N. F. Chant and F. R. Lorriman, who are appointed by the President of the University as his representatives, the graduate president, this year Mr. W. W. Small, B.Com., the secretary-treasurer, and the associate secretary, have ensured continuity of policy and business method in Council affairs.

The standing Committees of the Council, particularly the Publications Committee, the Finance Committee, and the Debates Committee, each directed an important part of the general work which was accomplished. The Committee on Student Service, through which the Council is kept informed of the various forms of student aid carried on under its auspices, again had a most satisfactory report.

The finances of the Council are in excellent condition and in spite of the increased costs of printing and several unusual expenditures, a satisfactory surplus is shown on the year's operations. Certain expenditures which have always been made from Council funds, such as the appropriation to the National Federation of Canadian University Students and that for the maintenance of the University Band, were not required this year, due to war conditions, and this assisted in creating the surplus. The only change in investments was the exchange of Province of Ontario 4½ per cent bonds for $3,000 Dominion of Canada 3 per cent War Loan, 1952.

The Loan Fund, administered by the Loan Committee of the Council under the chairmanship of Dr. J. J. Gibson, again functioned for the benefit of a number of students. Due to better business conditions, the demands were not so heavy as last year, but $4,840 was made available to students of the senior years to assist them in completing the year. The fund now stands at $18,000 and, by reason of repayments, the amount lent from the fund since its inception is nearly double this amount, i.e. $33,781. The Council is most appreciative of Dr. Gibson's valuable advice and assistance which have materially contributed to the satisfactory operation of the Loan Fund.

The Council publications have had a particularly successful year and have received much commendation. The *Handbook* is given to every undergraduate at the time of registration and is a most valuable source of information. It contains an excellent map of the city of Toronto, lists of officers of all undergraduate organizations on the campus with their telephone numbers, a description in condensed form of major university activities and facilities, and other useful material.

The Varsity this year celebrated its Diamond Jubilee and was generally considered to have reached a peak of excellence in general tone, editorial writing, and technical production. The hundredth and final issue of the year, as authorized by the Council, was a 48-page edition which could hardly have been surpassed. Excellent historical sketches of the development of the component parts of the University as well as stories and editorials covering present-day matters, made it an issue to be cherished. The 125 members of the staff all contributed to the success of the year's work as well as to the Jubilee number, but the major credit must go to the Editor, Mr. Larry Smith. His good judgment and co-operative spirit added to his ability as an editorial writer were marked throughout the year. It was a source of great pride to the Council when Mr. Smith was chosen as the recipient of the John H. Moss Memorial Award as the best all-round student graduating from the four Arts colleges. In recent years *The Varsity* has been of increasing value as a unifying factor in the University, as a medium for bringing important announcements and general information to the attention of students and staff, and as a means of guiding and expressing student opinion in world affairs as well as matters of local interest. The daily circulation amounts to some six thousand copies and includes a large mailing list of exchanges with other universities all over the United States and Canada.

The year-book, *Torontonensis*, was edited by Mr. Albert Mallon, fourth year St. Michael's College, and was a particularly creditable production. The forty-third volume, of which some fifteen hundred copies were published, was dedicated "to those members of the University of Toronto—Staff, Graduates and Undergraduates—who now are, or in the future shall be serving in His Majesty's forces of sea, land and air." All phases of the University's war effort were covered and the volume will undoubtedly prove a most valuable addition to the University historical records. As a considerable number of members of the graduating year have already enlisted in one of the armed services and still more will undoubtedly do so in the near future, the photograph and biography of each graduate will be a treasured recording of their university activities.

While general debating was somewhat curtailed due to the difficulty of public debate on most subjects of interest at this time, one happy feature of the year's programme was an invitation, sponsored by the University of Missouri and including several other American universities *en route*. This made it possible for the Council to send two representative students, Mr. E. F. Crawford, of St. Michael's College, and Mr. E. R. Gray of Victoria College, on a debating tour with the purpose of creating goodwill toward Canada in that important section of the United States. The two men were fully aware of their responsibility and all reports show that they carried out their mission most successfully. In April a team from the University of Maine came to Toronto in the course of a debating tour. In spite of the nearness to examinations a good debate was held and the visitors expressed the deepest appreciation of the dinner and other hospitality arranged for them by the Council.

The regular student aid services of the Council were again available to the students and all were much appreciated. The Housing Service was used in the fall by many undergraduates and was welcomed by parents who were thus assured of satisfactory surroundings for sons and daughters away from home for the first time. Before the opening of term, the Council Housing Inspector visited and graded over two hundred boarding and rooming houses, about nine hundred rooms, and a card index and master list of these were prepared and filed in the Council office. The information was used throughout the year by students and many staff members whenever a change of residence was planned. As a part of this service and also of the Employment Bureau, a record was kept of homes where free room and board might be obtained in return for certain services about the house. Many students were greatly assisted by this plan.

A Book Exchange was again operated for the benefit of women students and was largely used. Innumerable small services for the students were carried on in the Council offices ranging from orders for blazers and official jewellery to arrangements for ski week-ends in the north.

Probably the most far-reaching of all services was the Employment Bureau through which summer, part-time, and even permanent work was found for more than 2,700 students. Practically every student who applied was referred to a position. This source brings in excellent returns to the University as employers have been almost universally satisfied.

The University of Toronto Symphony Orchestra was again sponsored and financially supported by the Council. This organization is very representative as it includes about forty men and women registered in many different departments of the University. The conductor, Mr. Donald Ryerson, went on active service with the Navy at Christmas and Mr. Godfrey Ridout of third-year Music, consented to take over. It was thus possible to carry on, though under difficulties, and hold the annual concert in February.

The Council once more acted as host at the two Convocation Garden Parties on June 5 and 6. The President and two Vice-Presidents of the Council as well as the Presidents of the Medical, Engineering, and Dental students received with the President and Mrs. Cody. It was estimated that there were some three thousand guests present on the Thursday and about five thousand on the Friday. After the reception each day, Dr. Cody presented the Students' Administrative Council Honour Awards. Thirty-four awards were made by the Council to those students of the graduating year who were considered to have contributed most to the undergraduate life of the whole University. Of these, five were on active service and several others could not be present because engaged in essential war work. The mother of one R.C.A.F. man received his award for him and another managed a twelve-hour leave in order to be present. The certificate which has previously been given was supplemented this year by a golden drop in the form of a "T" bearing the University coat-of-arms and the words "Honour Award." This may be worn as a watch-charm or pendant. The Graduation ball in Hart House was another event for which the facilities of the Council were used. All tickets were sold in the office and general arrangements carried out. This is one of the most popular as well as beautiful of University functions and some 2,500 persons were present.

The delightful dinner which has been given annually by the President and Mrs. Cody for the members of the Council, was again a most happy affair and the students greatly appreciated the clear picture given them by the President of the problems facing the University as well as its great accomplishments. Another friendly and worth-while function was the annual dinner given by the Council to the members of *The Varsity* masthead.

The cancellation of intercollegiate sport removed certain responsibilities from the Council, such as arrangements for out-of-town trips, marshalling at the Stadium, and organization of the band which was taken over entirely by the C.O.T.C. In their place, however, new duties which would help in the national war effort were assumed. A campaign for the sale of War Savings Stamps was conducted and stamps were available to students and staff throughout the year in either of the Council offices. The enlistment of hundreds of student blood donors for the Red Cross blood serum service was a most valuable piece of work. *The Varsity* was used freely by the Council as an advertising medium for these and many other good causes. Substantial contributions were made to the International Student Service, the University Settlement, the C.O.T.C. Pipe Band, and the Jubilee Issue of *The Varsity*. Much assistance was given to the Red Cross workroom and the C.O.T.C. by the office force in typing and cutting stencils, and magazines for the armed forces were collected and sent forward.

It may safely be said that the Council has completed a most useful and satisfactory year. Adjustments of all sorts had to be made to meet the difficulties created by the Military Training programme but in no case were the demands too great. The cheerful acceptance of the changed situation by the entire student body proved that the undergraduates of this University are more than willing to co-operate if given a real task to do.

E. A. MACDONALD

REPORT OF THE MANAGER OF THE UNIVERSITY OF TORONTO PRESS

Forty years ago, in 1901, the University of Toronto Press was founded for the purpose of printing students' annual examination papers and other essentially University forms. From this modest beginning, involving one employee, one foreman, and one manager, it has developed into a large establishment employing seventy-two persons, and taking its place among the front rank of Toronto's printing and publishing firms. The plant is housed in a large three-story building and is fully equipped to handle every type of printing required by the University and is able to produce a complete book, including type setting, printing, binding and stamping. The Students' Book Department (owned by the Press since 1932) sells text-books, stationery, microscopes, and other supplies to all University students and staff.

During the past few years the volume of work produced by the Press as a whole has steadily increased. Perhaps the most encouraging increase is in the Publications Department. A comparatively small number of carefully chosen books is published each year. During 1940-1 there were eighteen books, covering a wide range of subject material, but all coming definitely within the academic sphere. As a matter of interest and of fact it should be noted that in all three of the departments—printing, publications, and retail book—it is a deliberate policy of the Press to confine its business to the University proper and to allied academic and educational institutions and organizations. It declines to enter into commercial competition with other printing and publishing firms in the province. The result has been that our relations with the printing trade generally are most cordial, a fact which is borne out by the recent election of the Manager to the Vice-Presidency of the employing printers' association of the city, known as the Toronto Graphic Arts Association.

In addition to the publication of books the Press also produces regularly four different journals, the *Canadian Historical Review*, the *University of Toronto Quarterly*, the *Canadian Journal of Economics and Political Science*, and the *University of Toronto Law Journal.* Each of these has a wide and respected reputation in its own field and the money expended in their production is felt to be more than offset by the value of the contents and the ensuing enhancement of the University's reputation.

One of the chief factors in the success of the Publications Department has been the excellent effort put forth by our proof-reading and editorial staff. Over a period covering the last ten years we have gradually built up a department which has attained a well-deserved reputation for accuracy and careful work and this has made it possible for us to produce books and journals of a very high standard. Indeed we have been asked to do the purely editorial work in connection with several volumes published by other firms.

As an aid to the dissemination of the results of research within the University a sum of money is set aside each year for the publication of these results and is divided among the various departments. These publications are known as Studies and are distributed as exchanges with other universities under the direction of Mr. Wallace, the University of Toronto Librarian.

A. G. Burns

RESEARCH

ANATOMY

Under the direction of Professor J. C. B. Grant

It is worth commenting on the fact that the outlook of Histology, now in charge of Dr. A. W. Ham, has changed considerably during the last decade, the tendency now being to study as living things the materials which comprise the human body and to consider them physiologically as well as anatomically. That is to say, the structural alterations that the tissues undergo under different kinds and degrees of activity increasingly arrest our attention.

Although the study of the living cell, as in tissue cultures, has had an effect in bringing about this change, the rise of endocrinology has had a still greater influence and much of the fundamental research in this field has been performed by histologists. Anyone privileged to see the profound and sudden changes that certain hormones can produce in the architecture of the tissues can scarcely refrain from regarding (and teaching) Histology as the study of living material.

During the past few years, and largely as a result of experimental work undertaken in this Department, much new histological material, illustrating the effects of the internal secretions and therefore of clinical significance, has been added to the sets of class slides. Since the study of an increasing number of slides happens to be associated with a decreasing amount of available teaching time, the microprojector is proving a remedy of value and is exemplifying the proverb that for every ill there is an antidote.

Under the direction of Professor A. W. Ham

During the past year histological studies have been made on sections prepared in this Department from the tissues of animals given diabetogenic anterior pituitary extracts in the Department of Physiology, and treated in other ways to produce diabetes. These studies have been made in collaboration with the members of the Department of Physiology concerned in these experiments. In the earlier studies attention was directed chiefly at the pancreas and other endocrine glands. More recent studies have been in connection with the pancreas in new conditions and with the liver and the alimentary tract. A lesion of the liver, almost as characteristic as the degranulation and hydropic degeneration of the beta cells of the pancreas, has been shown to develop in animals made diabetic with extracts. The lesion fails to develop when the extract fails to produce diabetes. It thus appears to be the manifestation of an important diabetogenic factor, and further study regarding its nature should yield valuable information regarding the as yet mysterious role of the liver in diabetes. Following observations of Dr. Campbell of the Department of Physiology to the effect that diabetogenic extracts cause gastro-intestinal upsets with intestinal bleeding, studies were made on lesions of the rectum in affected animals. These in their gross appearance simulated mucous colitis. Sections of these lesions revealed great congestion of the mucosa and a swollen vacuolated gut musculature which suggested that glycogen accumulation in the smooth muscle of the alimentary tube was the primary basis for the intestinal disturbance.

Following studies made by Dr. Haist of the Department of Physiology which showed that starvation, insulin administration, or fat feeding reduced the insulin content of the pancreas, histological studies of the pancreas of these animals concerned were made in collaboration with Dr. Haist. These revealed that in these conditions the beta cells of the pancreas contained scarcely any of their specific granules. Previous studies showed that overwork can produce degranulation of the beta cells and the degranulation so produced is associated with degeneration. This new study shows that a lack of granules in beta cells can also be caused by underwork and that this change is not associated with degeneration.

In some studies made jointly with Dr. Tisdall and Dr. Drake of the Hospital for Sick Children, it was found that a prolonged calcium deficiency during the growing period of an animal's life resulted in a skeleton with a scanty amount of bone. The articular cartilages of joints of animals thus treated had scarcely any bony support and the bone of the vertebral column was only a fraction of the thickness of that of the controls. That the developing vertebral column can be so affected by a dietary deficiency suggests the possibility of diet being a factor in the ability or inability of the vertebral column later to withstand trauma without alterations to its structure.

Miss V. Ryder, a post-graduate student in the Department, has found that a prolonged phosphorus deficiency, induced by feeding berillium to rats, causes a 10 per cent decrease in the haemoglobin content of the blood from that of pair-fed controls. A prolonged phosphorous deficiency was found to have no effect on the incidence of dental caries. Other tissue manifestations of phosphorus deficiency are being studied.

Mr. Gracent Eidt, a post-graduate student in the Department, has found that in several families of animals the interstitial cells of the testis are more numerous and more active in the full-term foetus than they are shortly after birth. This suggests they are stimulated during foetal life by certain of the hormones of pregnancy. Mr. Eidt has also studied the effect of anterior pituitary extracts on the repair of bone and after many experiments has been unable to find that anterior pituitary extracts containing the growth principle exert any marked effect upon the growth of callus.

Performed by Dr. C. G. Smith

Dr. Smith has studied the incidence of atrophy of the olfactory nerves in man. It was discovered that the olfactory nerves are not uncommonly partially atrophic and may be completely so. It was found that of 163 olfactory bulbs 17.7 per cent had normal olfactory nerves, that 13.5 per cent had lost all their olfactory nerves, and that 55 per cent had lost more than $\frac{3}{5}$ths of their olfactory nerves. The age incidence—that is to say, the relation of atrophy to age—is now being investigated. Dr. Smith investigated the destruction and regeneration of the olfactory mucous membrane of the frog following the application of 1 per cent zinc sulphate. These experiments confirmed the findings obtained last year. The time required for regeneration was found to be 70 days. He also investigated changes in the olfactory mucous membrane of the rat produced by prolonged inhalation of formaldehyde. No results are as yet available. He is investigating the changes in the volume of the brain due to anoxia. As yet there are no results to report.

APPLIED MATHEMATICS

Under the direction of Professor J. L. Synge

Dr. Griffith has obtained a simple direct proof of the reduction to Euclidean or pseudo-Euclidean form of the line-element in a Riemannian space with vanishing curvature tensor.

Professor Infeld has been working on a new method of solving eigenvalue problems in quantum mechanics, which originated from Schrödinger's paper on this subject. In connection with these investigations, Mr. Lin has written a short paper on the normalization of Dirac's functions, and Professor Infeld and Dr. Griffith have collaborated in an attempt to solve the Kepler-Dirac problem in a non-Euclidean universe.

Professor Stevenson has extended previous work on the theory of the radiofrequency method of determining magnetic moments. He has also made a contribution to the new Schrödinger-Infeld method of solving eigenvalue problems. The calculation of atomic energies is being investigated, using a more accurate expression than the usual one for the spin terms in the Hamiltonian.

Professor Synge has applied the methods of potential theory to the problem of the flow of air past an aerofoil of small thickness at small angle of attack; the problem is reduced to the solution of a single integro-differential equation.

Under the direction of Dr. Griffith

Mr. A. W. Walker has been investigating the flow of liquid past a cylinder by the methods of the boundary layer theory, taking into consideration various possible representations of the wake.

Under the direction of Professor Synge

Mr. W. Z. Chien has been engaged on a comprehensive treatment of the theory of thin elastic shells and plates. The theory avoids the special assumptions usually made, and covers the case of large deflections. The first part of this work has been published as a contribution to the von Kármán *Anniversary Volume.*

Mr. Y. H. Kuo has been investigating the theory of the flow of a compressible viscous fluid through a pipe, using approximate methods based on the smallness of the Mach's number.

Mr. C. C. Lin has been working on the statistical theory of turbulence, using Hill's spherical vortex as the model of a typical eddy. This appears to be the first attempt to construct a microscopic picture of turbulence. The theory gives correlation functions in fair agreement with experiment.

Mr. I. L. Wilson has been developing methods for determining stresses in naturally twisted bodies under tension, torsion, and flexure, with a view to application to the determination of stresses in stranded cables.

Messrs. Chien, Kuo, and Lin hold Sino-British Indemnity Fund Scholarships from the Chinese government for research in Applied Mathematics; they will continue their work during 1941-2.

Some war research is in progress for the National Research Council.

ASTRONOMY

Under the direction of Professor R. K. Young

General Programme

Since the opening of the Observatory we have been engaged in the determination of the radial velocities of the stars not previously observed and have for the most part focussed our attention on those stars in and near the Kapteyn Selected Areas. The first programme included all those stars in areas 4×4 degrees square down to declination +15 degrees and limiting magnitude 7.59. This list included 500 stars and was completed and published in 1939. As mentioned in our last report we have now undertaken an extension of this programme and have enlarged the areas to 6×6 degrees square. There are 404 additional stars in the enlarged areas and we aim to secure 4 or more plates of each star. About 350 plates remain to be taken to complete this programme. In the region of the sky from 19-24-9 hours of right ascension the 6×6 programme is practically finished and we have enlarged the areas to 8×8 degrees. There are 129 additional stars in these enlarged areas and about 310 plates will be needed to complete the observation of them. In addition we are observing a list of 189 bright stars, scattered over the northern hemisphere, for which no velocities are published.

During the year 959 plates were taken and the measurement of the plates has been fairly well kept up considering the curtailment of our staff. Plates were measured as follows: by Mr. Bunker, 360; by Mr. Buscombe, 451; by Miss R. J. Northcott, 181; about 200 plates remain to be measured.

Special Researches

During the year the Observatory has been very short of observers and it has required nearly all the time of the remaining staff to keep the main programme in operation. Consequently special researches have suffered somewhat.

Dr. Helen S. Hogg, research associate, has been on leave of absence for the year to be Chairman of the Department of Astronomy at Mount Holyoke College, South Hadley, Mass. During vacations she has continued research on globular clusters. One hundred and forty-three plates have been secured at the Newtonian focus for this purpose. A paper on the variables in the Hercules cluster should be ready shortly as a *D.D.O. Publication* and it is expected that periods in one or two other clusters will be published during the coming year.

Miss R. J. Northcott has investigated the spectroscopic binary H.D. 93075 whose variability was discovered by Dr. F. S. Hogg at this Observatory. Miss Northcott derives a preliminary period of 1.8052 days. She also completed the orbit of H.D. 22124, which appears as *D.D.O. Publication*, no. 8.

Mr. A. F. Bunker has measured line intensities in all the plates taken with the one-prism instrument 25-inch camera with a view to absolute magnitude determination. Completion of this work will have to be left in abeyance till more plates are available as the limited material does not suffice to investigate systematic errors sufficiently.

Mr. G. H. Tidy, who left the Observatory at the beginning of the year to join the Canadian Navy, completed the orbit of the spectroscopic binary H.D. 1826, which appears as *D.D.O. Publication*, no. 6.

Dr. J. F. Heard left the Observatory in November to join the Air Force. He completed the orbit of H.D. 9312 (*D.D.O. Publication*, no. 7) and investigated the velocity variations of H.D. 142926 (*D.D.O. Publication*, no. 9).

Dr. P. M. Millman left the Observatory in February, 1941—also to join the Air Force. Before his going he completed two publications: "General Instructions for Meteor Observing" (*D.D.O. Communications*, no. 6) and "The Perseid Meteor Shower, 1940" (*D.D.O. Communications*, no. 7). All being well, a fuller report on these activities will be given on Dr. Millman's return.

BIOCHEMISTRY

Under the direction of Professor Hardolph Wasteneys

Dr. Jeanne Manery Fisher has continued, with Mr. S. J. Slinger, the investigation of the electrolyte changes in, and the permeability of, developing fish eggs and larvae. The results showed that both whitefish and trout eggs present a unique problem in permeability by their ability to absorb sodium and potassium during the course of their development, from a dilute solution against a high concentration gradient. It was proved that these changes occurred in the embryo itself and not in the perivitelline space or outer membrane (chorion) which, with the embryo and yolk sac, comprise the egg.

The relation of the electrolyte composition of the blood and tissues of female fish to that of oviduct eggs was determined.

In collaboration with Mr. J. E. Moore and Dr. K. C. Fisher of the Department of Zoology, the influence of salts on the formation of the chorion and perivitelline space of freshly shed trout eggs was studied. It was found that a trace of calcium was necessary for the "hardening" which occurs just after shedding and which is so essential in preventing injury due to handling.

Experiments on the possible role of electrolytes in the etiology of shock, which were begun in the Department of Physiology last summer with Dr. C. H. Best and Dr. D. Y. Solandt, were continued and extended throughout the year to include studies of potassium metabolism in dogs.

Under the direction of Professor A. M. Wynne

The investigation of the properties and the formation of the phosphatase in the duodenal mucosa of rats, initiated two years ago with the collaboration of Miss M. Chernovsky and H. Z. Sable, has been continued by Miss M. Biehn and Miss E. A. Macpherson. The optimum conditions for the activity of the enzyme *in vitro* have been established with greater precision so that it is now possible to undertake with more assurance investigations which are concerned with the quantitative determination of the phosphatase activity of the intestinal mucosa and with factors which may influence the formation of the enzyme. Through the co-operation of Professor R. E. Haist of the Department of Physiology a preliminary study of the effects of adrenalectomy on phosphatase activity was made. Miss Biehn's work was supported by the National Research Council.

F. L. Root was engaged, until December 1, 1940, in further studies of toxin formation by C. diphtheriae. At that time he was ordered to active duty as an officer in the ordnance branch of the United States Army.

C. W. Shen has investigated the energy of activation of the phosphatase of saccharomyces cerevisiae. For this purpose three different substrates for the enzyme were employed, the hydrolysis of each of which was followed at two optimum pH levels, one in the acid and the other in the alkaline pH range. In all six cases the value of the energy of activation was found to be approximately 10,000 calories and was constant over a considerable range of temperature. Mr. Shen holds a scholarship which was granted by the Chinese government.

J. Tuba has continued the investigation of factors affecting the formation of phosphatase in yeast grown in synthetic culture media. The results of his work were incorporated in a thesis for the Ph.D. degree.

Under the direction of Professor L. Young

S. H. Zbarsky has been engaged in a chemical study of mercapturic acid formation and of its excretion, as a conjugate, in the urine of rabbits which had been fed a variety of cyclic hydrocarbon compounds. The purpose of this study is to obtain further information concerning the influence of cyclic hydrocarbons on sulphur metabolism. It is still incomplete and is being continued.

A. D. Barton has continued his work on the preparation and purification of a number of aryl hydrogen sulphates and their salts, with a view to further study of the conjugation as sulphates of aryl compounds in the organism.

D. H. Laughland has supplemented Mr. Barton's work by a study of the chemistry of aryl hydrogen sulphates and of methods for their accurate determination in urine.

Lung-hsiang Chang has established and standardized methods for the determination of cyclic hydrocarbons in urine of rats and rabbits to which such hydrocarbons had been previously administered. Following the administration of naphthalene to rats and rabbits there is excreted a compound which, on acid decomposition, gives rise to naphthalene. Mr. Chang has made quantitative estimations of the naphthalene thus liberated and has studied various factors which influence its liberation. He described his results in a paper which he presented to the Royal Society of Canada at its May Meeting.

Professor L. Young and Dr. B. F. Crocker have conducted and are continuing research on a war problem.

BOTANY

Under the Direction of Professor R. B. Thomson

I. Phanerogamic Botany and Genetics

Anatomy and Experimental Morphology

Bannan, M. W.	The wood structure of *Thuja occidentalis*. A study of variability in structure in different parts of the tree and in trees growing under different environmental conditions.
Haldenby, C. N.	The origin and distribution of horizontal resin canals in *Larix laricina*.
Radforth, N. W.	(1) The structural features of the fructifications of carboniferous fern-like plants. (2) Anatomical studies of some fossil plant types from the Minto Coal Basin, New Brunswick. (3) Investigations on some fossil wood from the Pennsylvanian system near Ottawa, Kansas, U.S.A.
Thomson, R. B.	(1) The comparative anatomy of the male and female cone scales of the conifers. (2) A mucilaginous layer of the pollen grain of the conifers and its connection with "wing" formation. (3) Simple and cleavage polyembryony in the conifers.
Thomson, R. B., and Hull, Miss Kathleen L.	The organization of the sporeling of Osmunda and of the lower vascular plants.

Taxonomy

The total number of specimens identified, mounted, stamped, recorded, and actually distributed in the herbarium during the year was 5,368. The total number of sheets in the herbarium is now 56,163.

Taylor, T. M. C.	(1) A critical study of the genus *Woodsia*. (2) Flora of the north shore of Lake Superior. A report on the plants of the Michipicoten area has been completed and one of the Peninsula area is in the course of preparation. (3) Study of collections of vascular plants made by members of the Royal Ontario Museum of Zoology field party at Fort Severn, Ontario, and at Churchill, Manitoba.

Genetics

Wright, Miss J. Gertrude.	A study of abnormal flowers of *Linaria vulgaris* and their inheritance.

II. Mycology, Forest Pathology and Cryptogamic Botany

Under the direction of Professor H. S. Jackson

Cain, R. F.	(1) A taxonomic study of Ontario Sordariaceae and related Sphaeriales. (2) The mycological flora of Oxford and Brant Counties, Ontario.
Jackson, H. S.	(1) The mycological flora of the Toronto region, the Temagami Forest Reserve, and of Algonquin Park. (2) A taxonomic study of Thelephoraceae in Canada. (3) A study of North American species of Corticium, Peniophora, and Aleurodiscus.
Lehmann, A. J. V.	A study of the nuclear phenomena of the germination of teliospores of certain species of Lepto-Puccinia.
Macrae, Miss Ruth.	A study of phosphorescence in *Panus stipticus*.
Skolko, A. J.	A cultural and cytological study of Aleurodiscus.

There have been 2,327 collections added to the Mycological Herbarium during 1940-1, and the collection now totals 73,600 specimens.

The herbarium of Bryophytes (Liverworts and mosses) now numbers 8,256 specimens, 576 specimens having been added during 1940-1.

III. Plant Ecology and Seed Studies

Under the direction of Professor H. B. Sifton

Structural Ecology

Facey, Miss V.	Abscission of leaves in diciduous plants and evergreens.
McLellan, Miss J. W.	Ecological studies of bitter pit in apples.
Moore, Miss R. H.	Effects of xeromorphic structure on the functioning of leaves.
Watson, W. R.	Developmental studies of leaf structure as related to light.

Seed Studies

Forward, B. F.	The response of certain seeds to low temperatures during the germination period.
Gordon, Miss E.	Dormancy studies in *Phleum pratense.*
McGugan, Miss J.	Seeds and seedlings of the Genus *Brassica.*

IV. Plant Physiology

Under the direction of Professor G. H. Duff

Clendenning, K. A.	Metabolism of the tomato fruit in relation to its growth and storage. Four chapters of this work have been concluded, prepared for publication, and submitted as a thesis for the Doctorate.
Duff, G. H., and Forward, Miss D. F.	Continuation of work on the metabolism of the standard wheat leaf.
Forward, Miss D. F.	The effect of oxygen upon cell permeability to sugar.
Stephen, W. A.	The thermal properties of osmophilic yeasts. This work has been concluded and the results incorporated in a thesis for the degree of M.S.A.
Ward, G. M.	The carbohydrate and protein changes in the tobacco leaf during growth and curing. This work continues in the laboratories of the Tobacco Division of the Experimental Farms Branch, Department of Agriculture.

V. Plant Pathology

Under the direction of Professor D. L. Bailey

Except where otherwise stated, these researches are being carried on in co-operation with the Vineland Horticultural Experiment Station.

Bailey, D. L.	(1) Strawberry root-rot. A study of normal root development in relation to the incidence and progress of root degeneration. (2) Physiological specialization in *Cladosporium fulvum,* the fungus causing tomato leaf mould. A hitherto unencountered physiological form has been isolated and its infection capabilities determined. As a result of the appearance of this form, the breeding programme with respect to the production of a resistant tomato variety, has had to be entirely recast.
Harrison, H. M.	A cold-storage disease of tomato fruits. In co-operation with the Ontario Agricultural College.
McKeen, C. D.	(1) The etiology of a ring-spot disease of gladiolus corms. (2) A study of the factors which modify the parasitic activity of Verticillium in selected soils.
Mead, H. W.	A co-operative study with the Dominion Plant Pathological Laboratory at Saskatoon of a seed-borne disease of barley caused by *Helmenthosporium sativum.*
Richardson, L. T.	The results of three years' studies on a disease of tomatoes caused by *Phytophthora parasitica* Dast. were presented in partial fulfilment of the requirements for the Ph.D. degree. It is hoped they will be published shortly in the *Canadian Journal of Research.*
Welsh, M. F.	A collar-rot of apple trees caused by *Phytophthora cactorum.* This project is supported by the National Research Council, Ottawa. Emphasis has been placed on a study of the influence of environmental factors, especially of soil moisture and soil temperature on disease incidence.

VI. Cytology

Under the direction of Dr. L. C. Coleman

Coleman, L. C.	(1) The cytology of Gasteria and Gasteria X Aloe hybrids. (2) The cytology of *Veltheimia viridifolia*, *Agapanthus umbellatus*, and *Kniphofia alloides* with special reference to the phenomenon of differential condensation at pachytene. (3) A study of *Trillium grandiflorum* more especially with reference to abnormal forms. (4) The cytology of Ring-forming species, more especially of *Rhoeo discolor* and *Oenothera* spp. (5) The intimate structure of chromosomes in widely separated forms.
Gopalayengar, A. R.	The cytology of Scilla and related genera.
Hillary, B. B.	The investigation of chromosome structure and fragmentation in *Tradescantia* spp.

CHEMISTRY

Under the direction of Professor F. B. Kenrick

Fifty-two students were engaged in research work during the session 1940-1 under the direction of members of the staff in the Department of Chemistry.

The degree of Master of Arts was conferred on nine of these: viz., Messrs. O. C. Allanby, H. A. Bewick, G. J. Janz, H. H. Richmond, J. H. Robertson, D. S. Russell, D. D. Stewart, R. F. Stuart, D. C. West; also on Miss E. Grant, who worked under Dr. Franks, Department of Banting Medical Research.

The degree of Master of Science in Agriculture was conferred on Messrs. G. A. Hills and F. Sowden, who worked under Professor Ruhnke at the Ontario Agricultural College, Guelph; also on Mr. S. J. Slinger for whom this Department and that of Biochemistry were jointly responsible.

The degree of Doctor of Philosophy was conferred on Mr. A. W. Birnie, whose research was done under Professor Kenrick, on Messrs. R. W. Allgood and W. J. Hornibrook who worked under Professor Gordon, on Mr. E. Y. Spencer whose research was directed by Professor Wright, and on Mr. Morris Wayman whose research was begun under the late Professor Miller and completed under Professor Wright.

FOOD CHEMISTRY

Under the direction of Professor C. C. Benson

There have been two students registered in this Department during the session of 1940-1, both of whom have been studying the chemical nature of the tannin of coffee, investigating methods for its estimation, and looking toward study of the variations in the amounts of tannin extracted in different methods of preparation of this beverage.

The nature of the proteins of certain cereals has been continued. Determinations have also been made to test the value of the photographic method of measuring the surface area of the human body for use in studies of basal metabolism.

GEOLOGY AND PALAEONTOLOGY

Under the direction of Professor E. S. Moore

Field or Laboratory Investigations in Geology

Fritz, M. A. Research on Gaspé bryozoa from Cap de Rosiers and La Force townships, Quebec.

Langford, G. B. Rock bursts, for the Ontario Department of Mines.

MacLean, A. Geology of Lebel Township, Kirkland Lake area, for the Ontario Department of Mines.

Moore, E. S. Iron deposits in Steeprock Lake area and mineral deposits in eastern Ontario.

Moorhouse, W. W. Field and laboratory studies of the geology of Bryce and adjacent townships, for the Ontario Department of Mines. Investigation of some hastingsite gabbros and pillow lavas.

Okulitch, V. J. Work on a monograph on the Pleospongia-Cambrian sponges, with aid of a grant from the Geological Society of America. Revision of type Pleospongia from Canada.

Russell, L. S. Field investigations of stratigraphy and palaeontology in Alberta, Saskatchewan, and Manitoba, with a grant from the Geological Society of America.
Study of land snails ancestral to Cretaceous and Tertiary brachiopods.
Work on the marine mollusks of the Eastend formation of Saskatchewan.
Investigation of remains of Pleistocene horses near Saskatoon, Saskatchewan.

Under the direction of the staff in Geology

Belding, H. F. Ordovician section at Rohallion, Ontario.

Coveney, C. J. Mechanics of the geological structure of Nova Scotia.

Crombie, G. P. Correlation of limestones in Ontario by insoluble residues.

Firth, D. A. Study of lamprophyres and porphyries of the Bryce area, Ontario.

Graham, R. B. Petrographic correlation of the formations of the Wetetnogami area, Quebec, with adjacent areas.

Low, J. H. Continuation of study of the Star of the East Mine Area, Ontario.

McGregor, J. P. Copper mineralization in diabase near Eagle Lake, Ontario.

Prest, V. K. Precambrian geology of the Miminiska-Fort Hope area, Ontario.

Smith, F. G. Laboratory investigations of gold deposition in the Canadian Shield.

Sternberg, R. M. Investigations of Carboniferous lung-fish, Devonian ostracoderms, and Cretaceous teleosts.

Thrall, G. W. Petrography of, and paragenesis in, magnetite-bearing noritic gabbros from Eagle Lake, Ontario.

White, W. H. Field and laboratory studies of some physical conditions in the formation of gold deposits.

HOUSEHOLD SCIENCE

Under the direction of Professor J. B. Brodie

Miss M. E. Lovell has completed her work on a "Comparison of efficiencies of home and commercial laundry processes." Standard test bundles were laundered a hundred times by a domestic process using various types of domestic mechanical equipment and by a controlled commercial process. The laundered samples were tested for chemical degradation by the cuprammonium fluidity test and for tensile strength loss. The detergency efficiency was investigated by determining soil removal from standardly soiled strips of the test bundles, and the whiteness retention of clean white strips by using a Hunter Reflectometer. A statistical analysis of the data showed causative factors. It was found that (1) for soil removal the commercial process is superior to all domestic processes, (2) for tensile strength loss the commercial process compares favourably with the domestic processes in which samples were dried outdoors but loss in strength is greater in the commercially washed samples than in those washed domestically and dried indoors, (3) chemical degradation is least when clothes are dried indoors as in the commercial method and in the domestic process using indoor drying, (4) from the standpoint of wear, indoor drying is preferable to outdoor but for whiteness retention outdoor drying is preferable.

Mrs. K. M. Elliot is investigating a microchemical method of determining degradation of cotton cellulose. Her experimental work is proving very interesting but is in the early stages at the present time.

Miss Barbara Broadfoot is analysing the data obtained from a nutrition survey made on a hundred low-income families in the city of Toronto. This work will be continued next year.

HYGIENE AND PREVENTIVE MEDICINE

Under the direction of Professor D. T. Fraser

Dr. Ronald Hare has continued his studies on the virus of influenza in which he has had the assistance of Dr. W. J. Auger and Dr. Laurella McClelland.

Through the generosity of the International Health Division of the Rockefeller Foundation, a supply of chick embryo influenza A vaccine was made available for trial. A group of one hundred persons was inoculated in Toronto and smaller groups at the Laboratory of Hygiene, Department of Pensions and National Health and the Animal Disease Research Institute. The behaviour of these groups has been intensively studied, specimens being obtained from every case of sickness among them. Attempts to adapt the recently discovered virus, influenza B of Francis, to the egg are in progress so that an experimental vaccine may be produced for protection against this virus as well. Studies, begun on the outbreak of war on haemolytic streptococcal infection of wounds are being continued. Further evidence has been obtained that these organisms are not present in the wound at the time of infliction, but enter it some time later. The most important source is the nasopharynx of someone who dresses the wound, and studies have been carried out on the method by which this usually occurs. Not only are such carriers able to expel the organisms when they speak or cough but they may also contaminate their hands or their clothing. Unless particular care is exercised they may very easily cause infection of open wounds which they may attend.

For further investigations on this problem, Dr. Hare has been provided by the Associate Committee on Medical Research of the National Research Council with the services of Dr. Reba E. Willits. Their work is being carried out in conjunction with Dr. W. E. Gallie and members of the Department of Surgery. In accordance with the conditions under which these grants are awarded, a report of this work will be furnished to the National Research Council and further details cannot be given here.

Dr. Ella Kuitunen has extended her study of human intestinal parasites. She has completed a comprehensive clinical trial of the curative value of phenothiazine in enterobius (pinworm) infection of children and adults. This study is of special value since the only other report of this nature in the literature on the use of phenothiazine was upon a very small number of persons and not of a critical character. Her results indicate that the drug is very effective in the cure of enterobiasis and in a smaller dosage than has been suggested heretofore. It is a pleasure to acknowledge the co-operation of Dr. Alan Brown and his associates and Dr. Monypenny and Dr. Mulock of the Children's Aid Society. A recent survey for enterobiasis in 178 children living in institutions and also in a group in foster homes showed the high prevalence of pinworm infection, namely that 54 per cent were infected. Dr. Kuitunen, through facilities offered by the Women's College Hospital, examined 240 patients for trichomonas vaginalis infection. Of these 35 per cent showed the presence of this parasite.

Dr. K. Sternbach working under grant from the Banting Research Foundation has continued the testing of the activity of a large series of new organic compounds. Eighty-eight such compounds were tried for their effect upon mice injected with meningococcus and mucin. Of the series, ten compounds showed definite activity. Dr. Sternbach has developed a chocolate agar medium which both accelerates and enhances the growth of the gonococcus. Experimental conjunctival gonococcus infection in rabbits was achieved in rabbits which were pretreated with benzine in oil. Mr. Goddard collaborated in this work.

Mr. R. J. Wilson has held the appointment of fellow in this Department. He has continued his interest in staphylococcus food poisoning and has contributed a number of papers to the literature upon this subject. The bacteriological study of cultures isolated in a recent epidemic in Hamilton has been carried out. The epidemiological investigation has been made by Dr. J. Edgar Davey, Medical Officer of Health, Hamilton, who kindly furnished the cultures. Mr. Wilson has successfully carried out an intensive study of the factors concerned in the growth of H. pertussis on Hornibrook's casein hydrolysate medium with a view to its use in the preparation of vaccine for human use. This vaccine has been submitted to clinical trial among children.

Dr. Frieda Fraser determined the agglutinative types of haemolytic streptococci among troops with scarlet fever and among civilians in Toronto and Port Arthur. Comparison of the types found in different areas and from various sources was of considerable interest from an epidemiological standpoint. Three-quarters of the cases of scarlet fever among troops belong to one type. In contrast to the strains isolated from troops there is a wide variety of types among civilians.

Dr. H. Plummer has been studying the toxins of the gas gangrene group of anaerobes with a view to the preparation of suitable antigens for active immunization. The activity of new organic preparations against experimental infection of mice with activated spores of the gas gangrene group has been explored.

Through the co-operation of the Department of Health, Ontario, and Dr. H. H. Harvie of Espanola, a new precipitated diphtheria toxoid prepared by Dr. P. J. Moloney has been under investigation. The diphtheria carrier survey of school-children in Toronto has been continued with the co-operation of Dr. A. B. Moffat and the Department of Public Health, Toronto. The effectiveness of concentrated diphtheria toxoid administered intranasally as a reimmunizing dose has been explored. The response in antitoxin is rapid and attains high levels. The effectiveness of a mixture of concentrated tetanus and diphtheria toxoids used intranasally is under investigation.

Dr. P. J. Moloney has devoted much of his time in the preparation and purification of antigens, particularly tetanus and diphtheria toxoids. He has made some very practical improvements in the flocculation test for assaying tetanus antitoxin. Dr. Edith Taylor is continuing her work in the use of synthetic media in the preparation of toxins, particularly of the anaerobic group.

MEDICINE

Under the direction of Professor Duncan Graham

The war has seriously affected the clinical investigation programme of the Department. Work in this field has been confined to the completion of certain studies and a limited investigation of certain problems related to the war.

Drs. Richardson and Hyland have published the report of their clinical and pathological findings in a series of cases of subarachnoid and intracranial haemorrhage caused by "berry" aneurysms. Dr. Richardson, who was responsible for the pathological studies in this report, was awarded the Reeve Prize by the Faculty of Medicine in recognition of his work.

Dr. Cleghorn, working in association with Dr. Philip Greey of the Department of Bacteriology, has demonstrated that the presence of shock is not a contraindication to the use of sulphonamide drugs for the prevention and treatment of infection.

Dr. Cleghorn and Mr. A. P. W. Clarke, Research Fellow in Medicine, have been studying the nature of the changes in the tissues of the gastro-intestinal tract occurring in adrenal insufficiency and in surgical shock. The results of the chemical analyses made by Mr. Clarke have provided valuable information as to the nature of the changes occurring in these two conditions. A report of this work will be made shortly to the National Research Council which has given financial support to this investigation as a war problem.

Dr. A. E. Parks, working in association with Dr. Shanks of the Department of Pathology, attempted to produce renal lesions in rabbits by the intravenous injection of serum from rabbits treated with intraperitoneal injections of degenerated rabbit kidney emulsion. The results of the experiments were essentially negative.

Dr. Cleghorn and his associates have continued their investigation of the cause of vascular failure in adrenal insufficiency. In a report recently published, they conclude that exhaustion of sympathin, at least in the splanchnic region, is not the cause of vascular failure in adrenal insufficiency.

During the past three years Drs. Fletcher and J. W. Graham have carried out a controlled clinical study on the therapeutic and toxic effects of gold therapy in fifty-five cases of rheumatoid arthritis. Gold therapy was combined with rest in bed and the regular treatment given arthritic patients. They report a more rapid improvement and a faster graduation into the inactive phase of the disease than was observed before the institution of gold therapy. Nineteen per cent of cases recovered with apparent inactivity; 50 per cent were much improved; 19 per cent improved; and 11 per cent showed no change. Toxic manifestations, usually of a mild character, were observed in 59 per cent of the cases.

Drs. Dauphinee and Hepburn investigated the pathological physiology in two cases of chronic cyanosis. The cyanosis in the first case was found to be due to methaemoglobin in the blood which was measured quantitatively by comparison between the oxygen capacity and the iron content of the blood. The methaemoglobinaemia could be relieved entirely by the administration of methylene blue, but its cause could not be determined.

In the second case, the chronic cyanosis was due to inadequate oxygenation of the blood in the lungs, the arterial blood being less than 70 per cent saturated with oxygen. This was caused by a highly vascular tumour permitting free communication between pulmonary artery and pulmonary vein. The condition was diagnosed clinically as an haemangioma of the lung and was cured by pneumonectomy. A detailed report of the findings in this case will be published shortly.

The rapid recognition of lead poisoning is frequently of clinical importance. Dr. W. R. Campbell, by using diphenylthiocarbazone, has devised a procedure suitable for clinical purposes by which minute amounts of lead may be detected in small amounts of urine.

MEDICAL RESEARCH

Under the direction of the late Sir Frederick Banting

Most of the efforts of the Department during the year were devoted to the solution of problems arising in the R.C.A.F. due to the greater accelerations and higher altitudes at which modern aircraft operate. This work was largely supported by special grants from the National Research Council through its Associate Committee on Aviation Medical Research, of which the late Sir Frederick Banting was Chairman. Those so engaged included Drs. H. C. Bazett, E. C. Black, A. C. Burton, J. A. Kitching, J. B. Bateman, H. G. Armstrong, Mr. John Goodwin, G. A. Meek, G. J. Millar, S. Smith, Miss J. Lang, Miss M. Shaw, Miss H. Brock, and Miss E. White. Other members of the Department have devoted part time to the same group of problems. Some work on medical aspects of chemical warfare was also done under National Research Council sponsorship. This investigation was conducted by Dr. C. C. Lucas and Dr. D. A. Irwin, with the part-time collaboration of Dr. H. M. Macrae (Department of Ophthalmology) and Dr. N. M. Wrong (Department of Medicine). Technical assistance for this problem has been obtained from Mr. A. Lougheed and Mr. C. Cassie and part time from Mr. A. Arcari and Miss M. Wheatley. Dr. J. M. R. Beveridge has devoted the latter half of the academic year to one phase of this investigation.

The work on chemotherapy under Dr. C. C. Lucas has been continued, although on a somewhat smaller scale than last year. Through the continued co-operation of Dr. P. H. Greey of the Department of Pathology and Bacteriology, the new compounds made in this laboratory have been examined for chemotherapeutic activity. The drugs have been tested upon mice experimentally infected with streptococci, pneumococci, or staphylococci.

Mr. C. Marchant has prepared representative members of two series of benzimidazole compounds (benzimidazolones and benzimidazolthiones) containing a sulphonamide group or linkage. Dr. S. F. MacDonald, before he left in December, 1940, had added to the series of sulphonamides of the types described in this report last year and these new compounds have been tested for activity. Dr. C. von Seemann has prepared 1-amino-naphthalene-5-sulphonamide and sulphonamides derived from α-acetylaminothiophene. He has also prepared a series of dyes by coupling diazotized aromatic amines with α-acetylaminothiphene. Dr. von Seemann has also made sulphonamides derived from benzothiazole.

Dr. J. M. R. Beveridge continued his studies of methods for separating amino acids from protein hydrolysates until the pressure of war work in the Department necessitated a change in his problem. For some months he was engaged in a study of the blood esterases of animals subjected to acute and chronic anoxia in the decompression chamber. Recently he has been engaged in a biochemical study of animals exposed to vesicant war gases.

Mr. N. R. Stephenson was assigned the problem of purifying histaminase to a high degree of activity since the proposal had been made that injections of the purified enzyme might be of therapeutic value in the treatment of shock. He has obtained preparations with high activity which are stable in solution for at least a week at 5°C. No adverse physiological effects were noted in normal animals following injection of massive doses of the purified enzyme nor were any beneficial effects observed when it was injected into histamine-shocked animals. Mr. Stephenson has studied the action of the purified enzyme on histamine in a Warburg apparatus.

Mr. C. McArthur, working under a Macy Fellowship, has continued his studies of the chemical composition of the lipid material in atheromatous plaques derived from human autopsy material. He has been particularly concerned with the unsaturated fatty acids of the glycerides and the sterol esters.

Dr. J. G. Dewan and Miss E. Melrose have continued the biochemical work on patients with schizophrenia in collaboration with the Toronto Psychiatric Hospital, under a grant from the Rockefeller Foundation. This investigation covers one phase of a collaborative study of these patients commenced several years ago under the direction of Dr. G. E. Hall and Professor C. B. Farrar. Mr. Gordon Parkes, who has been paid from the same grant, has been taking electroencephalographic records on these patients under the supervision of Mr. J. E. Goodwin. Mr. John Goodwin and Miss Helen Brock have continued to study the records so obtained.

Dr. D. A. Irwin and Mr. F. E. Chase continued their co-operation with the Mining group by studying the effect of aluminum powder on the growth of the tubercle bacillus in vitro. The organisms that failed to grow in media containing aluminum powder were shown to be non-viable when injected into guinea pigs. Dr. Irwin and Mr. Chase are testing a chemical derivative of the tubercle bacillus protein (which had been prepared by Dr. Franks and Miss E. Grant) for its activity in developing immunity in guinea pigs.

Dr. Bruno Mendel, with Miss Dorothy Mundell (Banting Research Foundation Fellow) and Miss F. Strelitz continued their work on cholinesterase. Highly purified preparations were obtained from pancreas and serum. The pancreas esterase was separated from its colloidal protein carrier, which could be replaced by various unspecific organic and even inorganic colloids.

Dr. Mendel and Miss Strelitz started work on an enzyme which catalyses the reaction between thiosulphate and hydrocyanic acid leading to the formation of thiocyanate. Attempts were made to purify this enzyme and its properties and kinetics were studied.

MINERALOGY AND PETROGRAPHY

Under the direction of Professor A. L. Parsons

Professor A. L. Parsons has devoted his attention to work connected with certain minerals essential to war industries, with gratifying but unpublishable results. In this connection it is a pleasure to pay tribute to his predecessor, Professor T. L. Walker, who made important contributions to our knowledge of all the minerals concerned and their occurrence in Canada.

Professor Ellis Thomson has been engaged in a study of the mineralogy of the Kerr-Addison Mine.

Professor M. A. Peacock has contributed a critical study of rare and uncertain ore minerals by *x*-ray methods, obtaining new structural data for the minerals mentioned. Continued work on the bismuth tellurides has proved the individuality of Tellurbismuth and Tetradymite and has shown that the materials named Joseite, Grünlingite, and Oruetite may provisionally be united as a third distinct species. Aikinite proves to be unrelated to Bournonite. Frieseite is a pseudomorph now consisting mainly of Sternbergite and Pyrite. Argentopyrite is a distinct species. Loellingite and Safflorite are very similar in structure and can hardly be distinguished by physical means. As this work continues, the usefulness of *x*-ray photographs in mineral identification is becoming increasingly apparent. The preparation of a röntgenographic determinative scheme is therefore contemplated.

Dr. V. B. Meen completed the re-examination of the Maria Elena meteorite. He also was engaged in completing his work on the geology of the Grimsthorpe-Barrie area in eastern Ontario, as well as a special report on the fluorite deposits of the Madoc area. He also has devoted some time to assembling the equipment required for microanalyses and to practising microanalytical methods, in order to meet the pressing need for accurate mineral analyses on small samples.

Mrs. H. L. Banting, under the direction of Professor H. E. T. Haultain and Professor Ellis Thomson, made a special study on improvements in polishing methods as applied to the ores of the Denison Nickel Mine.

Mr. D. A. Moddle was engaged in a crystallographic study of Augelite and Meneghinite, and has determined the unit cell and space group for these two minerals.

Mr. F. G. Smith has found an explanation for the wide variation in the electrical conductivity of pyrite in terms of small variation in the chemical composition and in the continuity of the crystal structure.

Dr. L. G. Berry completed his studies of mineral sulpho-salts and has developed a classification of these minerals in the light of structural evidence as shown by *x*-ray examination.

The Walker Mineralogical Club in June, 1941, had on its list 3 honorary members and 369 ordinary and student members. Of these, 16 are known to be on active military service and are exempt from dues. In addition to the above, the club has lost 2 members by death and 5 members by resignation during the year.

The club pays a portion of the cost of publication of *Contributions to Canadian Mineralogy* which has increased in size by the collaboration of our colleagues in other institutions who are members of the club.

OBSTETRICS AND GYNAECOLOGY

Under the direction of Professor W. A. Scott

Dr. W. G. Cosbie has completed, and recently presented, a study of complications following radiological treatment of gynaecological carcinoma. Although the risk of such complications under the present method of intensive treatment is considerable, the improvement in the late results would appear to justify the taking of such risks.

Dr. Nelson Henderson has made a valuable study of granulosa cell tumours of the ovaries, on which subject he has published one paper, and is preparing another for publication this fall.

The use of chemo-therapy in the treatment of Neisserian infections has lessened the work of the Special Treatment clinic, and has apparently reduced the number of cases of salpingitis seen in the wards.

Dr. John Mann has continued his investigation on "Toxaemias of Pregnancy," and has recently presented the results in a paper at the Canadian Medical Association.

OTO-LARYNGOLOGY

Under the direction of Professor G. M. Biggs

Dr. J. Grant Strachan has continued his investigations in Atrophic Rhinitis during the past year.

PAEDIATRICS

Under the direction of Professor Alan Brown

The study of the control of cross-infections under practical hospital conditions by the use of ultraviolet light together with air-conditioning is being continued. In wards equipped with cubicles, ultraviolet lights, and air-conditioning, the incidence of cross-infection has been only one-quarter that in wards where the infants were separated by partitions. The nasopharyngeal flora of infants and the nurses and physicians in contact with them is being followed in an effort to trace the source of the cross-infections.

In co-operation with the Connaught Laboratories an immune rabbit serum for the prevention and treatment of whooping cough has been developed. This is now undergoing clinical trial. The bactericidal power of human blood on the meningococcus is being studied and work is in progress on a method of typing this organism using normal guinea-pig blood.

Incidence studies are being made on heart disease in school-children. The effect of sulfanilamide on acute and chronic rheumatic infections in children is being studied. Using the *x*-ray, new methods have been developed to evaluate the condition of the heart in the acute and convalescent stages of rheumatic fever.

During recent years reports have appeared upon the good effects of vitamins B1, B6, and E in the treatment of muscular dystrophy. Carefully controlled observations have enabled us to conclude that the administration of vitamins B1, B6, or E was not of definite value in the treatment of muscular dystrophy in the human. Work is in progress on the production of muscular dystrophy in animals by dietary measures.

The effect upon the infant of the oral administration of vitamin K to the pregnant woman at varying times before delivery has been determined. It has been found that the administration by mouth of vitamin K to the patient who arrives at the hospital in labour, provided that at least four hours elapses between the ingestion of the vitamin and delivery, increases the prothrombin content of the infant's blood to a height well above that which occurs in haemorrhagic disease of the newborn.

In co-operation with the Department of Horticulture of the Ontario Agricultural College at Guelph, studies are being continued on the vitamin C content of various Canadian fruits and vegetables, particularly tomatoes. The effect of variety difference, seasonal variation, cultural methods, and cooking upon the vitamin C content is being studied. Great differences have been found in the vitamin C content of canned tomatoes processed by different canners and in different packs of the same canner. This fact has been brought to the canners' attention by the Ontario Department of Agriculture in the hope that the canners may be able to produce a product having a uniformly high vitamin C content. Under ordinary commercial cold storage practice, Ontario spinach has been found to lose over 95 per cent of its vitamin C content while still remaining perfectly satisfactory from the taste and appearance standpoints. It is hoped that some means may be found to decrease this loss during storage.

In co-operation with the Department of Obstetrics, University of Toronto, the Dietetic Department of the Toronto General Hospital, and the Visiting Homemakers Association, studies have been completed on the influence of good and poor prenatal diets on the health and obstetrical course of four hundred women. Observations are continuing on the offspring of these women. Ninety women found to have poor diet and low income were supplied with certain essential foods daily throughout the latter half of the prenatal period. Each diet record was analysed in order to determine as closely as possible the amount of the individual food components received by the mothers. Studies of the blood phosphatase, vitamin C, and haemoglobin were made at intervals on both the mother and the child. Clinical observations and the laboratory investigations indicate that the prenatal diet has a striking influence on the health of the mother during pregnancy, labour, and convalescence. The diet during pregnancy also markedly affects the health of the child during the first few months of life. The incidence of miscarriage, prematurity, and stillbirth was very much less in those supplied with supplemented prenatal diet. The ability of the mother successfully to nurse her infant was better in the good diet group. The condition and progress of the baby in the hospital were better in the good diet groups. When examined at six months of age the babies born of mothers on a good or supplemented diet weighed more, were in better general health, and had suffered fewer illnesses during the first six months of life. There were more deaths from infections in the poor diet group. Studies of phosphatase in the mother's blood indicate the value of vitamin D in pregnancy.

In co-operation with the Dominion Departments of Agriculture and of National Health, we have devoted a good deal of attention to a consideration of the B group of vitamins in relation to national health. Nutritional surveys show that the Canadian people as a whole are not receiving the amount of vitamin B1 necessary for optimum mental and physical efficiency. It has been pointed out that the distribution in foods of the other members of the vitamin B complex parallels to a degree vitamin B1. The adequacy of the vitamin B complex as a whole in the Canadian diet is open to question.

Canadian agriculture produces foods which are rich in the various members of the B complex, particularly wheat and milk. At least one of our new Canadian rust-resisting wheats, which will soon constitute a large portion of the commercial wheats grown in the West, is very rich in vitamin B1. Unfortunately, in the present process of milling, white flour retains only about one-sixth of the original vitamin B1 content of the wheat, a small percentage of the other members of the B group, and only one-seventh of the original iron. The retention of these valuable food elements now lost for human consumption is engaging the attention of members of the Department of Agriculture and various millers throughout Canada. The per capita consumption of Canadian flour has steadily decreased over the past forty years. If anything can be done to increase the use of Canadian wheat and flour through increasing its nutritional value, it is obviously of the greatest importance to Canada not only from the standpoint of improving the health of the nation but from the agricultural and economic standpoints. At the present time the Canadian government, through the Canadian wheat pool, is the owner of 350 million dollars worth of wheat. Co-operating with Dr. L. H. Newman, Dominion Cerealist, white flour has been produced experimentally which retains from two-thirds to three-quarters of the vitamin B1 originally present in the wheat, and an appreciable amount of the other B vitamins. It is hoped that white flour may be produced commercially in our Canadian mills which will carry a much greater proportion of the B vitamins than that carried by the baker's white flour as now commonly used. This it is hoped may be accomplished at no increase in milling cost and with the use of the present milling machinery. White bread made from this flour and 4 per cent skim-milk solids supplies appreciable amounts of the various members of the vitamin B complex. Studies of the public reaction to bread made from this flour indicate that it is acceptable to over 90 per cent of the people as a white loaf of bread. The use of this flour by our Canadian people in place of the present white flour would supply for nothing in the course of one year many millions of dollars worth of the B group of vitamins at drug-store prices. Probably no one dietary change would be of greater importance in improving the health and efficiency of the nation than the substitution of this white flour with vitamins retained for the white flour now being used in Canada.

PATHOLOGICAL CHEMISTRY

Under the direction of Professor Andrew Hunter

Dr. Nicholson and Dr. Selby have continued their work on renal function in experimental unilateral kidney lesions. The effect of cyanide was studied and it was found that the effects in the intact animal differed somewhat from those reported by other workers for the excised kidney. The main difference was that no glycosuris was produced.

The work on the effect of staphylococcal infection on carbohydrate metabolism in rabbits which was being carried on in collaboration with the Department of Pathology and Bacteriology has been continued by Dr. Holman of the latter Department and by Dr. Nicholson. Definite decreases in carbohydrate tolerance, as evidenced by the occurrence of glycosuria and by changes in the glucose tolerance curve, were produced by repeated subcutaneous injections of staphylococcus toxin in rabbits on normal diets and by repeated subcutaneous injections with staphylococcus aureus in rabbits on a high carbohydrate diet.

Dr. Nicholson has completed one phase of work on the effect of high blood ureas on the acid base balance of serum in dogs, showing that when the blood urea is raised by urea injection some extra base, probably organic, appears in the serum.

Mr. Gornall, under the direction of Dr. Hunter, has confirmed and amplified last year's work on the mechanism of urea formation in the liver. Evidence has been accumulated which shows that at least one factor limiting the rate of urea formation in surviving liver tissue is the speed of the citrulline-to-arginine transformation.

Dr. Woodward, also working under the direction of Dr. Hunter, has continued his work upon the specificity of arginase, giving special attention to the quantitative measurement of the relative activity of the enzyme toward substrates of varying constitution.

Dr. Hunter and Mr. Downs have made quantitative measurements of the effect of a variety of amino acids upon the activity of arginase. The results are of great interest from a theoretical point of view, and have a practical bearing upon the use of arginase as a reagent in the analysis of proteins.

In a research carried out in co-operation with the Department of Medical Research Mr. MacArthur has extended his work on the lipide constituents of human atheromatous plaques so as to make the results quantitative as well as qualitative. The data now available make possible a detailed comparison of this fatty mixture with (similar) normal and pathological fats found elsewhere in the body. Definite proof has been obtained that the atherosclerotic plaques contain only a negligible amount of glyceride, a fact which may shed light on the chemical mechanism underlying the specific deposition of cholersterol and cholesteryl esters in atherosclerotic lesions.

Several members of the Department's staff have continued to take part in the programme of research in Aviation Medicine initiated under the late Sir Frederick Banting, in the Department of Medical Research.

PATHOLOGY AND BACTERIOLOGY

Under the direction of Professor William Boyd

During the year a number of investigations on material coming to autopsy were made, and several reports are to be submitted for publication. Dr. J. D. Duffin has reviewed seven cases of Addison's disease due to cortical atrophy. In addition, he has studied the subject of "superior pulmonary sulcus tumour" and concluded that these tumours are malignancies of the lung and not of branchiogenic origin. Dr. A. L. Gordon has reported an unusual case of Friedländer's bacillus septicaemia with involvement of the lung, liver, and urinary tract. Fatal anuria due to plugging of the ureters by deposits of sulphapyridine crystals was the subject of a paper by Dr. S. Hanson. The harmful effects of high voltage radiation on the intestinal tract have been described by Dr. R. M. Taylor. A case of multiple adenomata of the islet cells of the pancreas with fatal hypoglycaemia, the symptoms of which were unrelieved by the administration of glucose, was the subject of a report by Dr. A. J. Kerwin. The latter has also prepared an analysis of five cases of pulmonocardiac failure due to extreme deformities of the spinal column. Dr. William Boyd is studying the juxtaglomerular apparatus in a variety of animals, with special reference to changes in this structure in cases of arterial hypertension in man. He is also analysing the renal lesions of chronic and healed pyelonephritis, comparing cases in which there was hypertension with other cases in which the blood pressure was normal.

Dr. R. M. Price's systematic study of juvenile cases of tuberculosis shows that there is an appreciable diminution in the incidence of bovine infection which she attributes to the adoption of compulsory pasteurization of milk in this province. She is also investigating a number of chromogenic strains of acid-fast bacilli isolated from various human sources to determine if possible their relationship to the avian type of the tubercle bacillus. Through the courtesy of Dr. D. A. Irwin of the Department of Medical Research she has obtained, and is studying in detail, a strain of the vole bacillus, an acid-fast bacillus recently isolated in England, and which has given some promising results as an immunizing agent.

The search for chemotherapeutic compounds possessing special activity against the staphylococcus has been continued by Dr. P. H. Greey throughout the year. Over one hundred compounds have been investigated without finding one superior to sulphathiazol. Some of the compounds were synthesized in the Biochemical Division of the Department of Medical Research under the direction of Dr. C. C. Lucas, while the others were prepared by Parke Davis and Company. This investigation again has been aided by a generous donation from this company.

The chemotherapy of experimental gas gangrene infections in animals has been studied by Dr. P. H. Greey and Dr. R. A. Cleghorn of the Department of Medicine. It has been found that sulphonamide drugs, administered either by mouth or intravenously have very little effect on experimental Cl. Welchii infections. On the other hand the implantation of the compounds into the lesions has resulted in complete control of the infection. This work was aided by a grant from the National Research Council.

In the division of Surgical Pathology a new device has been developed on the principle of the dental drill for marking glass slides. Work previously reported on gastric and duodenal ulcers is being continued, each ulcer being carefully plotted in its relation to the fundo-pyloric line. A method for differentiating in the gross the acid and alkaline portions of the stomach is being worked out. Dr. W. L. Robinson presented a study on dermato-fibroma of the skin before the Ontario Association of Pathologists and Dr. J. P. Wyatt one on periarteritis nodosa. Dr. Robinson has also made a study of the histopathology of the prostate and Dr. Wyatt an investigation into foreign body reactions.

The division of Neuropathology has been pleased to give laboratory space and facilities to Squadron-Leader Murray L. Barr, R.C.A.F., who is engaged in an experimental research in collaboration with the Department of Medical Research. During the year the division has assisted the Department of Medical Research in several investigations.

Dr. M. A. Ogryzlo has collaborated with Dr. W. L. Donohue of the Hospital for Sick Children in the collection of a series of cases of hydrocephalus and is preparing a paper demonstrating the importance of the Arnold-Chiari deformity of the brain-stem in relation to hydrocephalus. Pathological material from the files of this division has been used by Dr. J. C. Richardson in an important contribution which he and Dr. H. H. Hyland have recently published on the subject of intracranial aneurysms. Dr. Richardson and Dr. A. W. Bagnall have published a report on recurrent subarachnoid haemorrhage from an angioma of the cerebellum, a study undertaken when Dr. Bagnall was a member of this Department. Dr. Robinson and Dr. Linell have completed an investigation of the relation of head injuries to meningitis which will be published shortly.

PHARMACY AND PHARMACOLOGY

Under the direction of Professor V. E. Henderson

Research work has progressed satisfactorily, but somewhat slowly, and Dr. Ferguson's absence has delayed the publication of several studies.

Professor Lucas has refined the methods for the isolation and identification of coramine and a paper dealing with this work has gone to press. He has also made substantial progress with the methods for the isolation and identification of minute amounts of strychnine, such as occur in homocidal cases. Dr. Lucas contributed the necessary analytical work to a further study of ethyl propyl ether by Dr. W. E. Brown.

Professor Ferguson's study of the reflexes occurring during parturition has led to his publishing a brilliant piece of work of great importance. This work has been strengthened and amplified by the work of Dr. Bonnycastle on isolated uterine strips from the pregnant and non-pregnant rabbit. This forms the material for a paper by these two authors, as mentioned in the list of published papers.

Dr. Bonnycastle has nearly completed his series of observations upon blood plasma and interstitial fluid volumes under various anaesthetics, while Dr. C. S. Dafoe, working under a grant from the National Research Council to Professor Lucas, has completed a series of observations on the effect of various anaesthetics in shock, which shows clearly that ether is more dangerous than the other available agents.

Dr. A. Rytel, working under a grant from the National Research Council to Professor Ferguson, had completed a part of a series of studies on the effect of various digitalis glucosides when he left to join the Polish Army. He has gathered some important information which will be reported to the Council and in due course amplified for publication.

Mrs. M. M. O. Sweeten, working under a grant from the E. B. Shuttleworth Company, has gathered, incidental to the technical work she has been doing, some information of value on the frog and cat methods of assay of Digitalis Lanata tinctures and glucosides. It is hoped that this work will contribute to a further study next year of the important problems of standardization.

PHYSICS

Under the direction of Professor E. F. Burton

In many fields of research carried on in this Department regular investigations that we had planned to continue for some years have had to be given up temporarily on account of the war problems that have been brought to the

Department for solution. Early in the summer of 1940, Professor R. H. Fowler, Plummer Professor of Mathematical Physics at Cambridge University, came to Canada as scientific liaison officer connected with the British High Commissioner's Office in Ottawa, and worked in close co-operation with the National Research Council in advising regarding the undertaking of research problems in some of the physical laboratories of Canadian universities.

At the suggestion of Professor Fowler we have undertaken two or three important investigations which are still in progress, details of which, of course, cannot be published. Professor Fowler returned to England in April, but Sir Lawrence Bragg, Director of the Cavendish Laboratory, Cambridge, has taken his place in Canada for the time being.

Low Temperature Research

The work on problems of liquid helium, and the investigations at extremely low temperatures have been definitely discontinued for the duration of the war, and all the facilities of this laboratory have been devoted to war problems. This work is under the direction of Professor J. O. Wilhelm, and has been participated in by Messrs. A. J. Bachmeier, L. D. Armstrong, J. C. Findlay, and Dr. Misener.

The Electron Microscope

Work with this instrument has been continued this year under the following grants-in-aid: (1) from the National Research Council, support for one worker, Mr. J. H. L. Watson; (2) from the Banting Research Foundation, support for one worker, Dr. L. T. Newman, for work on viruses; (3) from the Ontario Mining Association; (4) an Industrial Fellowship from the Columbian Carbon Company, under which Mr. W. A. Ladd was employed. He also held a Studentship from the National Research Council.

Pictures have been taken of various samples of clays and dusts, carbon black preparations, and in co-operation with Dr. D. H. Hamly, of the Department of Botany, a very interesting series of photographs of diatoms has been prepared which demonstrates the usefulness of the electron microscope in the interpretation of high power microscopic photographs.

In addition to the workers named above, Mrs. Beatrice Reid Deacon has been employed latterly on research work related to war problems.

We are very proud to report that our former workers on the electron microscope, Mr. C. E. Hall, Mr. James Hillier, and Mr. Albert Prebus have been doing very good work in various places in the United States, and have received very flattering appointments.

Geophysics

The most striking thing that we have to report under this heading is the receipt of a generous donation of $10,000 from the Viking Foundation, which has been used to initiate the Wenner-Gren Geophysics Fund. This contribution was obtained through the good offices of Mr. Hans Lundberg of Hans Lundberg, Limited. This kindness on the part of Mr. Lundberg is in addition to very generous donations from the above Company which have been sufficient to support several workers engaged in geophysical research.

(1) Professor Lachlan Gilchrist in co-operation with Mr. A. R. Clark, Mr. K. W. Fritsche, Mr. J. W. M. Britton, Mr. E. H. Dexter, and the Aldermac Copper Corporation: Exploration of mining properties was carried out in the summer of 1940 and the winter of 1940-41 by the correlation of the results of the following surface and sub-surface investigations: (*a*) magnetic, self potential, and electrical resistivity measurements were made on the surface of the ground; (*b*) use was made of deep drill holes (1) to carry out electrical coring measurements, (2) to determine the distribution of resistivity in the neighbourhood of

ore deposits or disseminated minerals; (*c*) to determine the distribution of resistivity in inter-drill hole regions. The sub-surface conditions portrayed by the explorations agreed very closely with the conditions found by subsequent drilling. The extent of necessary drilling in any region has been greatly lessened by the use of these methods of exploration.

(2) Dr. A. A. Brant with the assistance of Mr. E. H. Dexter, who was paid out of the Wenner-Gren Fund, has made very important improvements on a standard form of gravimeter. These workers are undertaking an investigation of the gas and oil fields of western Ontario during the summer.

(3) Under Professor Pitt and Dr. A. A. Brant and Mr. E. P. Hincks, a portable ultrasonic apparatus has been developed and tried out successfully, for the measurement of the depths of lakes.

(4) Through the efforts of Dr. A. A. Brant, the Department of Physics has recently received a gift of some modern seismic apparatus through Dr. Hopkins of the Imperial Oil Company. The equipment came from the Humble Oil Company and will enable us to undertake practical work in this field.

(5) The complete laboratory for the detection of the helium content and radioactivity of rocks set up through the generosity of Mr. Hans Lundberg has been continued. This phase of the work is under the immediate direction of Dr. N. B. Keevil, who has been assisted by Mr. F. J. P. Consitt and Mr. R. F. Errington. There is no doubt that this division is now making very important contributions to this particular phase of geophysics.

Spectroscopy

(1) Dr. Elizabeth Allin and Dr. H. L. Welsh have been carrying out investigations on the metallic content of leaves, in order to determine if the spectroscope can be useful in giving an idea of the minerals beneath the surface where the trees are growing. This work also has been supported by Mr. Hans Lundberg.

(2) *Atomic Spectra:* The hyperfine structures of lines of the third spectrum of phosphorus have been studied and the magnetic moment of the phosphorus nucleus determined. This investigation was carried out by Mr. J. Levinson, a grantee of the National Research Council, under the supervision of Professor M. F. Crawford.

(3) *Molecular Spectra:* The improved apparatus and techniques developed during the past two years by Dr. H. L. Welsh and Professor Crawford made it possible to investigate second-order effects in Raman spectra. Mr. G. D. Scott, a grantee of the National Research Council, used this equipment to study systematically second order effects for a number of substances with tetrahedral molecular symmetry.

During the summer of 1940 Professor Crawford and Dr. Welsh, with the assistance of Mr. Scott and Mr. Levinson, systematically studied the Raman effect of about ten binary mixtures of polar and non-polar molecules. This problem was undertaken to test the additivity law and ascertain the possibilities of using the Raman effect for making quantitative analyses. This research was assisted by a National Research Council grant.

Graduate instructional work in spectrographic chemical analysis was continued during the past year and was actively supervised by Dr. Welsh in association with Professor Ireton and Professor Crawford.

Thermionics

Very careful work has been carried out under the direction of Professor Arnold Pitt, with the assistance of Dr. R. W. McKay, Mr. Wm. McPherson, Dr. E. O. Braaten, Mr. E. H. Carveth, and Mr. Thompson, on problems related to the war.

Other Investigations

Dr. Satterly has continued the study of elastic properties of springs and indiarubber.

Dr. H. A. McTaggart, in connection with the war effort, has given a special course of seventy-five lectures in optical design and computing to men who are working with "Research Enterprises, Limited."

Radon Seed Production

The apparatus for the production and quantitative calibration of radon seeds, which is the property of the provincial government, but is under the direction of the Director of the McLennan Laboratory, has been operated very successfully during the past year, by Mr. A. W. Love until March, when he was called up for service with the Special Science Branch of the R.C.A.F., and since that time by Miss Barbara Girdwood, B.A., who graduated this year in the Department of Mathematics and Physics, with first-class honours.

PHYSIOLOGY

Under the direction of Professor C. H. Best

Several members of the staff of this Department have spent a considerable proportion of their time during the past year facilitating the development of the Canadian Project for the Preparation of Dried Human Serum. Dr. Best and Dr. Donald Y. Solandt have served on the Canadian Red Cross Society committee which is charged with the enlistment of blood donors and the other activities associated with securing the blood donations. They have also had responsibility in the Connaught Laboratories, where all the Canadian serum is dried. Dr. E. Fidlar, Dr. R. E. Haist, and some of the part-time members of the staff have worked in the Toronto blood donors' clinic.

Professor N. B. Taylor has undertaken work in collaboration with Dr. E. T. Waters, to explore the possibilities of a 7 per cent solution of isinglass as a transfusion substitute in haemorrhage and shock. Experimental results suggest that this may prove a valuable substitute for blood in restoring the blood pressure in these conditions. A paper describing these experiments on laboratory animals has already been published.

The biophysical section, under the direction of Dr. Solandt, has been concerned particularly with problems arising out of the war. Mr. J. W. Dales has completed a study of the parameters of excitation for intact mammalian nerves and an important connection between calcium metabolism and excitation has been demonstrated. He is proceeding to a related study of the efficiency of excitation exhibited by currents of various wave-forms. This work has indicated the special efficacy of low frequency sinusoidal currents, a finding which has an important practical application to methods used in the physiotherapy of injured limbs. This work has been facilitated by micromanipulative equipment provided through the generosity of the American Philosophical Society of Philadelphia. Dr. J. W. Scott has continued his study on the acetylcholine sensitivity of muscles deprived of lower motor neurone control.

Collaborating with the Head of the Department, research work on some of the special physiological problems facing the Royal Canadian Navy and the Royal Canadian Air Force has been undertaken. A part of this work has already been completed and has yielded results of practical importance.

As mentioned elsewhere, Dr. Waters has collaborated with Drs. Taylor and Fidlar in the experiments on blood substitutes. Dr. Waters has been responsible for the chemical aspects of this work. With Dr. Haist he has obtained some interesting preliminary results when concentrates of urine of depancreatized dogs have been injected into rats. These experiments may provide further information on the complex endocrine disturbance of diabetes. Dr.

Margaret T. C. Mitford of the University of St. Andrews has been working with Dr. Waters on blood coagulation changes in anaphylactic shock.

Dr. Haist and his group have attacked the problem of the delayed shock which sometimes follows the release of pressure on animal tissues.

Dr. Fidlar has collaborated with Dr. Waters in experiments bearing on the origin of blood platelets. Their report was published this year. In observations in heart-lung preparations no satisfactory evidence was obtained of platelet production in the lungs, and the question arose whether certain special factors may influence this production. Further work on platelets in anaphylaxis is under review. Still other work upon platelets is being done in connection with the possible use of isinglass in haemorrhage. In collaboration with Miss Dale, experiments have been conducted upon the occurrence of haemorrhagic kidneys resulting from choline-deficient diets. Up to the present, results obtained are confirmatory of other work in this field.

The study of the relation of the anterior pituitary gland to metabolism has been continued by Dr. J. Campbell. In collaboration with the Head of the Department and with Dr. Ham and Dr. Haist, the effect of different diets and of fasting on the transient diabetes produced in dogs by the administration of anterior pituitary extracts was determined. A test has been developed for diabetogenic potency, using normal dogs which have been proved sensitive to the diabetogenic extract. Using this test the fractionation studies of the extracts have been continued. Mr. D. F. Pen and Dr. Campbell have developed convenient quantitative tests for toxic material in the tissues of shocked animals. The extracts of the tissues of normal and shocked animals exhibited essentially the same toxicity. The ash of the extracts was highly toxic. Dr. Jeanne Manery Fisher of the Department of Biochemistry kindly offered to determine the potassium of the ash, and it was estimated that at least 70 per cent of the potassium of the muscle had been extracted by the procedures used. The injection of equivalent amounts of potassium chloride produced similar toxic effects. The potassium content of the blood of the test mice was increased greatly, and to the same extent, by the muscle ash and by equivalent amounts of potassium chloride. Potassium is without doubt the chief toxic factor in the muscle extracts under the conditions of these tests.

Dr. L. B. Jaques has been engaged in the development of a method of preparation of thrombin. The past year has been spent in overcoming the technical difficulties involved in the preparation of prothrombin, and a simple method of preparation of this substance has been developed which yields an active thrombin (25-250 units/mg.) in high yield (70-100 per cent). A new method for the assay of prothrombin has been developed. The method is based on the use of citrated horse plasma and logarithmic scales, and has proved extremely valuable in the preparation of the material. In last year's report mention was made of the finding that dog heparin appeared to be different from that obtained from beef tissue. This finding has been extended by isolating heparin as the crystalline barium salt from four species (dog, ox, pig, and sheep) and it has been shown that while these have the same fundamental chemical composition, they show marked differences in biological activity, their relative anticoagulant activity being 10:4:2:1.

Considerable time has been spent this winter and spring in collaboration with Dr. A. F. Charles of the Connaught Laboratories in developing a colorimetric method for the determination of heparin. The method is based on the use of the dye, toluidine blue, and conditions necessary for accurate assays have been determined. It is expected that this will make progress possible in the study of heparinase and also in various problems on the physiology of heparin which involve the frequent determination of heparin in blood.

PSYCHIATRY

Under the direction of Professor C. B. Farrar

Research work carried on jointly with the Department of Medical Research under a Rockefeller Grant was continued during the year. In some of the cases of schizophrenia studied, there are suggestive indications of abnormalities of metabolism. Such cases when responding favourably under insulin therapy have been found to show improvement in the metabolism, and a corresponding improvement in certain clinical and psychological features. There are also brain potential changes as seen in the electroencephalogram that appear to parallel the clinical course.

During the past two years efforts have been directed to the development of a quantitative method of assessing the degree of psychosis during the course of illness in order to provide a more satisfactory method of comparing clinical with other findings. An attempt has also been made to standardize a method of measuring the degree of intellectual dysfunction to make possible a further quantitative index of improvement under treatment. These findings require further working over.

PSYCHOLOGY

Under the direction of Professor E. A. Bott

During the session 1940-1 twenty-six students were enrolled for graduate instruction in Psychology. One candidate completed the requirements for the Ph.D. degree and four for the M.A. degree. The names of these candidates and the subjects of their theses follow:

For the Ph.D. degree

LOEB, MISS N. The educational and psychological significance of social acceptability and its appraisal in an elementary school setting.

For the M.A. degree

BELYEA, E. S. W. A test of distance judgment for the selection of aviation personnel.

DINGEE, MISS R. W. An attempt to select student nurses by means of a battery of psychological tests.

HILL, MISS F. M. A comparative study of the psychometric performance, school achievement, family background, interests and activities of shy and normal children.

THURLOW, MRS. J. K. Recall of finished and unfinished tasks.

Two research fellows conducted intensive studies in their respective fields as approved by a departmental committee in charge of these projects. Miss M. D. Salter, who held the David Dunlap Memorial Fellowship for a second year, continued her study on the educational adjustment of medical students. This study included an analysis of the major factors determining success or failure in the medical course; the establishment of a predictive index for selecting promising students; and an analysis of the conditions which lower the achievement of promising students. Miss N. Loeb, who held the John Northway Memorial Fellowship, completed a study on the educational and psychological significance of social acceptability and its appraisal in a school setting. The significance of social acceptability was indicated with regard to educational objectives and personal development.

During the session several members of the staff have been actively engaged in the preparation and administration of psychological tests for the classification of personnel in various units of the Canadian Active Service Force. Some steps were taken to extend this work into the field of industry and the production of munitions. This work has necessitated considerable curtailment of academic research in order to maintain the full programme of undergraduate and graduate instruction.

Professors Bott and Cosgrave, supported by a grant from the National Research Council, have directed a programme of psychological research for the Royal Canadian Air Force. Special tests have been given to approximately five thousand aircrew men shortly after enlistment. The scores on these tests are being analysed and compared with the achievement of these men during training. The grant has provided for three research assistants while the R.C.A.F. has provided clerical assistance. Early in April Professor Bott left for England in order to co-ordinate this work with similar studies being carried out by British psychologists. During the period of his stay he has been appointed to the rank of Wing-Commander in the R.C.A.F.

Professor Chant has continued studies of student adjustment and academic success.

Professor Line, in addition to assisting with the Canadian Psychological Association's programme for developing tests for military purposes, has directed studies in the field of mental hygiene.

Professor Ketchum has continued the study of attitudes toward war commenced in 1939. Data for the year including the collapse of France and the bombing of Britain were analysed and summarized. Several significant changes in attitude were found. Further ecological studies of Toronto were carried out with special reference to population mobility.

Professor Myers continued an investigation of changes in the psychological functioning of schizophrenic patients undergoing shock therapy. Further work was done on the development of a method for the psychiatric "screening" of large groups of military personnel through the identification of abnormal patterns on a military intelligence test. A preliminary survey was made of fatigue effects and illness resulting from emergency speed-up in certain war industries.

Professor Bernhardt has directed two studies on abnormal behaviour in rats. One of these dealt with the effect of various drugs on the incidence of "neurotic seizure," and the other on the genetic features of the same behaviour.

Miss Northway has continued studies with regard to the education and adjustment of campers and has been active in the establishment of a Committee on Education and Research of the Ontario Section of the American Camping Association.

SURGERY

Under the direction of Professor W. E. Gallie

Owing to the depletion of the staff because of the war the amount of research in the Department is naturally curtailed. Dr. Gordon Murray, however, in what time is left to him, has continued his investigation of the uses to which heparin can be put in enlarging the field of application of surgery in the blood-vessels. Dr. H. F. Robertson, with advice from Professor V. E. Henderson, has continued his search for ways of lessening the damage to the heart resulting from coronary occlusion, and Dr. F. R. Wilkinson has continued his studies of the effect of sulphathiazole in osteomyelitis and staphylococcus septicaemia. Dr. D. R. Mitchell has continued a study of the effects of sodium sulphathiazole in the treatment of acute pyelitis and cystitis and of gonorrhoeal arthritis.

THERAPEUTICS

Under the direction of Professor R. F. Farquharson

Dr. K. J. R. Wightman has worked with Dr. J. A. Dauphinee of the Department of Medicine in the continued investigation of the use of the sulphonamide series of drugs in respiratory and other infections.

Dr. A. H. Squires has continued the investigation of the effect of prolonged ingestion of thyroid substance by patients not suffering from hypothyroidism. A report of this work, indicating that the secretion of the patient's thyroid gland is inhibited by prolonged ingestion of thyroid substance, has been presented to the Association of American Physicians.

ZOOLOGY

Under the direction of Professor E. M. Walker

Animal Bionomics and Ichthyology

Under the direction of Professor A. F. Coventry

SOLMAN, V. E. F. Ecological relations of predatory fish and ducks.

DYMOND, J. R. Taxonomy and distribution of Coregonine fishes of northwestern North America; history of the Atlantic salmon in Lake Ontario.

Under the direction of Professor J. R. Dymond

HUNTSMAN, MISS E. The fishes of Arctic America.

KENNEDY, W. A. Dwarf and normal whitefish of Lake Opeongo, Ontario.

RADFORTH, MRS. I. Distribution of Ontario fishes.

TONER, G. C. Ecological and distributional studies of the fishes of eastern Ontario.

WILDER, D. G. Study of the migratory and non-migratory habit with special reference to the speckled trout.

Comparative Neurology

CRAIGIE, E. H. Measurements of vascularity in various regions of the brain of the painted turtle; cerebral cortex of the penguin; morphology of the capillary bed of (*a*) the central nervous system of a coecilian, *Siphonops annulatus*, (*b*) the brain of Sphenodon, (*c*) parts of the brains of the lung fishes *Protopterus* and *Epiceratodus;* the arteries on the surface of the brain of the alligator; preliminary studies of the vascularization of the alligator brain.

Under the direction of Professor E. H. Craigie

DRUMMOND, S. P. Vascularization in the brains of hibernating frogs.

ELLIOTT, H. E. Study of the architectonic areas of the cerebral cortex in the groundhog (*Marmota monax*) and the deermouse (*Peromyscus maniculatus*); a method for showing gradations of cortical characters by means of contour maps.

Experimental Biology

FISHER, K. C. Mechanism of light production in luminous bacteria.

FISHER, K. C., and GIESE, A. C., of Stanford University. Effects of cyanide and azide on respiration and light production in luminous bacteria.

FISHER, K. C., and HENRY, RICHARD, of the University of Pennsylvania. Effects of narcotics on the metabolism of cell division initiated by fertilization in the egg of Arbacia.

FISHER, K. C., and STERN, J. Metabolism and cell division in yeast and of activity respiration in frog muscle.

FISHER, K. C., and FISHER, MANERY, of the Department of Biochemistry, and MOORE, J. E. Formation of the chorion and the perivitelline space in the living teleost egg at the time of fertilization.

The above studies constitute the beginning of a general survey of the relations between cell metabolism and various other cellular functions.

Under the direction of Professor K. C. Fisher

ARMSTRONG, C. W. J. Relation between metabolism and rhythmicity in the frog heart.

KIRK, Miss D. W. Rhythmicity of the heart of Daphnia.

MARTIN, Miss R. D. C. Changes in resistance to cyanide in various embryos, as they develop, including direct measurements in the circulatory and nervous systems.

WORKMAN, Miss G. Physiology of movement and response in fish and tadpoles with particular reference to the behaviour of organisms in a temperature gradient.

Genetics

MACARTHUR, J. W. Cytogenetics of tomatoes; size inheritance, and selection in tomatoes; hybridization with Lycopersicon species; size selection experiments with the house mouse; genetics of black and grey squirrels and of melanic deer mice; sex distribution among multiple births.

MACARTHUR, J. W., and WILKES, A. Results of introduction into the forests of strains of Microplectron selected in the laboratory for high and low temperature preferences.

Under the direction of Professor J. W. MacArthur

Anderson, Miss M. Selection of temperature-preference races in Drosophila.

Chiasson, L. P. Cytogenetics and disease resistance in Lycopersicon species and in their interspecific hybrids.

Engelbert, Miss V. E. Modified forms of reproduction in several species of blue grass (*Poa*).

MacIlwraith, J. J. Methods for autosexing of chicks at hatching time.

Human Biology

Ford, **Norma**. Taste reactions of multiple sets, including the Dionne quintuplets (with the co-operation of Dean Mason); dermal configurations of the kindred of mongoloids (with the co-operation of several Ontario and New Jersey hospitals); blood vascular system in the placentae of multiple births (with the co-operation of four Toronto hospitals).

Ford, **Norma**, and **Mason**, Dean, of the Faculty of Dentistry. Comparative dental studies of multiple sets, including triplets, quadruplets, and the Dionne quintuplets.

Ford, **Norma**, and **Penrose**, L. S. Study of the kindred of two phenylpyruvic sisters.

Ford, **Norma**, and **Hill**, Miss M., of the Department of Psychology. A study and re-classification of a set of trizygotic triplets, formerly described as monozygotic.

Under the direction of Professor Norma Ford

Stewart, Miss **Glenna**. Palmar and plantar patterns in conjoined twins.

Invertebrate Zoology (including Entomology)

Walker, E. M. Exoskeleton and musculature of abdomen of Grylloblatta; nervous system of Grylloblatta; taxonomic and faunistic studies of Canadian Odonata; a new Gomphus from Louisiana.

Under the direction of Professor E. M. Walker

Follwell, J. H. Rates of oviposition in normal laboratory and selectively bred preferred temperature lines of *Microplectron fuscipennis* Zett.

Judd, W. W. Comparative study of the proventriculus of Orthoptera and related orders of insects.

Lamont, Mrs. R. B. Life history and cytology of *Nebela collaris* Leidy; chromidia of *Amoebae testacea*.

Neal, G. M. Taxonomic and ecological studies of Canadian rotifers, including a revision of the genus Pedalia.

Nesbitt, H. H. J. Taxonomic revision of the Tyroglyphidae, a family of mites infesting stored grain.

Urquhart, F. A. Ecological and taxonomic studies of Ontario grasshoppers and crickets, with special reference to Essex County.

Limnology

(Ontario Fisheries Research Laboratory, under the direction of Dr. F. E. J. Fry, in the absence of Professor W. J. K. Harkness)

Under the direction of Professor J. R. Dymond (in the absence of Professor W. J. K. Harkness)

Moore, J. E. Limnology of the saline lakes of Saskatchewan.

Fry, F. E. J., assisted by **Hart**, J. S., **Brett**, J. R., and **Tovell**, H. M. Thermal and respiratory tolerance of fishes; continuance of the Algonquin Park creel census.

Fry, F. E. J., assisted by **Brett**, J. R., and **Clawson**, G. H. Lethal limits of temperature for the goldfish.

A grant of $400 from the National Committee on fish culture was received for the study of lake trout and supported some of the work carried on in Algonquin Park.

Under the direction of Dr. F. E. J. Fry

Hart, J. S. Relation between abundance of small-mouth black bass and the size composition of the populations concerned.

Ide, F. P. Qualitative and quantitative study of the insect food of speckled trout in the Oxtongue River, Algonquin Park, at different seasons and different times of the day; studies of the stomach contents of various other fish for comparison with those of trout.

Under the direction of Professor F. P. Ide

Sprules, W. M. Distribution of aquatic insects in a stream in Algonquin Park, a survey dealing with linear distribution along the stream bottom, distribution according to type of bottom and distribution as it is correlated with rate of flow of the water.

Davies, D. M. Taxonomic and distributional studies of blackflies (Simuliidae) and sandflies (Ceratopogonidae) in streams of Algonquin Park.

Langford, R. R. Comparative sampling methods for plankton organisms. New traps have been developed which yield a much more accurate measure of the standing crop.

Langford, R. R., assisted by Martin, W. R. Distribution, movements, food relations and growth of the perch in Algonquin Park Lakes.

Marine Biology

Huntsman, A. G. Sea life of the Atlantic salmon; theory of fishing.

Under the direction of Professor A. G. Huntsman

Kerswill, C. J. Environmental factors influencing the growth and distribution of the quahaug (*Venus mercenaria*).

White, H. C., of the staff of the Fisheries Research Board of Canada, was given accommodation from December to April for study of the following: Migrating behaviour of sea-running speckled trout (*Salvelinus fontinalis*); river movement of salmon; the parasitic copepod, *Lepeophtheirus salmonia.*

Elson, P. F., of the staff of the same Board, was similarly accommodated from December to April for the following: behaviour, food, competitors and enemies of salmon parr.

Vertebrate Anatomy and Embryology

Baillie, W. H. T. Movements of the eye in vertebrate and invertebrate forms; study of an extra-uterine pregnancy in the rabbit, in which fully developed embryos were attached to the great omentum.

Under the direction of Professor A. F. Coventry

Ironside, A. Investigation of the possible effects of temperature in reproduction in deer mice (*Peromyscus maniculatus gracilis*, a relatively northern form, *P. m. bairdii*, a relatively southern form, and a hybrid between them).

THE SCHOOL OF ENGINEERING RESEARCH

Department of Mining Engineering

Under the direction of Professor J. T. King (with M. Hewer)

Precious metal collection by lead. A beginning has been made in a study of the rate of collection of gold and silver from ores by lead in crucible fusions.

The relative solubility of gold in lead and in litharge. In ores of quite low gold content, the completeness of recovery in an assay is partly dependent on the solubility of the gold in litharge. A research is in progress to determine the effect of this solubility on recovery.

Department of Mechanical Engineering

Under the direction of Professor R. W. Angus (with A. D. Hogg)

Aeroplane vibration pickups. A paper on this subject has just been completed, and will be published as *Bulletin* 168 of the School of Engineering Research, before the end of June, 1941.

Under the direction of Professor E. A. Allcut (with I. W. Smith)

The structure and properties of heat insulating materials. A new apparatus was designed and constructed for testing the transmission of heat through materials that are used for the heat insulation of steam pipes. Tests were made with this apparatus up to pipe temperatures of about 1,000°F. and the behaviour of various materials was noted at different temperatures, with canvas and metallic outer coverings, respectively. The influence of winds at velocities up to 20 miles per hour was also investigated.

School of Architecture

Under the direction of Professor E. R. Arthur

Old Ontario architecture. During the past session a study has been made of a number of farm buildings, chiefly barns and buildings of wood.

Department of Applied Physics

Under the direction of Professor K. B. Jackson

(with D. H. Hamly and W. A. Mohun)

Photographic sensitometry. Further investigation was carried out on methods of developing sensitometric strips and a photo-electric micro densitometer was developed for more rapid measurement of the strips.

(with V. L. Henderson and E. L. Dodington)

Acoustical absorption coefficients. This research on simplified methods of measuring was continued. Two methods were tried with unsatisfactory results, but finally Hunt's normal mode frequency band-width method was investigated and an instrument was developed and constructed to measure small differences in frequency up to 2,000 cycles per second.

(with E. L. Dodington)

Mensuration of storage piles (pulpwood, coal, etc.) by terrestrial photographic surveying. A rapid method of surveying storage piles for the purpose of computing volume to an accuracy of ½ per cent or better has been developed and tested with very satisfactory results.

Under the direction of Professors K. B. Jackson and W. M. Treadgold

Model for aerial surveys. The purpose of this research is to provide a means whereby complete aerial surveys may be carried out in the laboratory. A suitable area of 45 square miles on the north shore of the Ottawa River opposite Pembroke, including all types of topography has been chosen. This will be reproduced to a scale of 1:2500 in a relief model 10×18 feet. A camera carrier will be erected over the model with adjustments to provide movements and rotations of the camera along and about 3 axes. Most of the details of the structure necessary to support the model and camera carrier have been designed, and the construction of the pantograph for routing the model in plaster from enlarged contour maps is nearing completion.

Department of Chemical Engineering

Under the direction of Professor J. W. Bain (with B. Marks and H. A. G. Kingsmill)

The oxidation of lignin. Progress is being made in this investigation with the assistance of Mr. Kingsmill (IV year) during the past winter. Mr. B. Marks is continuing the work, which has proved to be tedious and slow.

Under the direction of Professor M. C. Boswell

(with W. H. Rapson)

The transformation of cellulose into oxalid acid. Having obtained a high yield of oxalic acid from cellulose, as indicated in previous reports, the research was extended to the determination of the mechanism of the degradation of cellulose in caustic alkali fusions. A report on the entire research has been presented to the University as the fulfilment of the requirements in the major subject for the Ph.D. degree.

(with W. H. Rapson)

The transformation of sodium and potassium acetates into the corresponding oxalates. The conditions have been realized for obtaining a yield of 90 per cent of the theoretical in the case of sodium acetate and of 100 per cent in the case of potassium acetate.

(with J. R. Jones)

The synthesis of inositol. Further progress has been made, especially with respect to the devising of analytical methods necessary for the continuance of the investigation.

(with A. S. Weatherburn and E. B. Trickey)

The production of toluene from benzene. This research has been carried out under the auspices of the National Research Council, to whom a report will be made at the completion of the work. The research is still in progress.

Under the direction of Professor R. R. McLaughlin and Dr. J. G. Breckenridge

(with W. G. MacElhinney and R. G. Billinghurst)

At the request of the National Research Council two war research problems of a confidential nature have been undertaken. A considerable amount of time and effort have been devoted to these researches, which will be continued during the summer.

Under the direction of Professor E. A. Smith

(with E. M. Evans, W. G. Carlton, and F. A. McPhee)

Soybean protein plastics. This research has been continued during the past session. A more promising moulding material has been obtained, which gave a clearer button. This research is still in progress.

(with D. M. Jamieson)

Quick drying oil from soya bean oil. The more highly unsaturated constituents were separated by saponification and re-esterification of the oil and fractional distillation of the esterified product.

Department of Electrical Engineering

Under the direction of Professor H. W. Price

Electrical contacts for small contacting forces. Two important commercial applications are in progress. A report will be available after long trials in routine service.

Super-invar. Difficulties in obtaining suitably pure ingredients, and proper furnace conditions for obtaining a homogeneous alloy have delayed this work. It is believed, however, that success is near.

Under the direction of Professor D. N. Cass-Beggs

Design of eddy current brakes. The problem is the design and construction of a self-contained brake having the steep torque characteristic of normal eddy current breaks (useful for holding constant speed) but at the same time having the point at which maximum torque is obtained adjustable over a wide range of speeds. This research is still in progress.

Department of Metallurgical Engineering

Under the direction of Professor R. J. Montgomery

Beneficiation of non-metallic minerals. Considerable progress has been made with this research, and the work has been carried out in the ore dressing laboratory by the staff and advanced students. This research is being continued.

Glasses for artificial eyes. The principal glass for the bulb or eye ball has been made and commercial glass tubing is being produced by the Corning Glass Works of the composition and to the specifications given them. A paper describing this work has been published in the *Journal* of the Canadian Ceramic Society. Special clear and coloured glasses for the iris, cornia and pupil are now being developed. The work will be continued.

The substitution of nepheline syenite for potash feldspar in electrical porcelain. The results of this work were presented at the April meeting of the Canadian Ceramic Society and will be published in the *Journal* of the Society this year.

FACULTY OF DENTISTRY

A mutual antagonism manifested clinically in the processes concerned in calculus formation and caries production was the basis for certain investigations carried out by Dr. H. K. Box in the problem of caries immunity. The protective factor against the initiation of caries as shown in calculus formation seems to be a property of the early soft phases regardless of calcification. In consequence, a study of the role of certain fatty acid substances as a protective agent against dental caries and erosion was undertaken. The clinical aspect of prevention along these lines is also being investigated.

In the Department of Preventive Dentistry, a study of the influence of fluorine on the structure of teeth and the resistance of the enamel to caries, by Miss D. F. J. Berry, Drs. M. A. Cox and J. Kreutzer is proceeding.

Dr. J. J. Rae of the Department of Chemistry investigated the relationship between the amount of phosphatase in the saliva and the activity of dental caries.

Under the supervision of Dr. R. G. Ellis, sixty-eight boys of the Boys "K" Clubs directed by the Kiwanis Club were given dental treatment in the Infirmary. Special attention was given to the control and prevention of dental caries. It is the intention of the Faculty to attempt to demonstrate how this problem may be met with in groups of citizens of low incomes.

At various points where the S.S. *Nascopie* called during its trip from the middle of July to October, 1940, Dr. W. D. Cavanagh had the opportunity of studying dental conditions of the people in the eastern Canadian Arctic and Greenland. His findings verified those of Dr. C. H. M. Williams who did similar research in the previous year, as well as adding further knowledge to the study of diet in relation to dental conditions.

While Dr. R. J. Tickle, a graduate of Sydney, Australia, and of this Faculty, was at All Saints' Hospital at Aklavik, N.W.T., giving dental service to the staff and natives during the summer of 1940, he also made a study of the dental conditions of the people of the district.

Dr. R. Gordon Agnew, after personal investigations, made a report on the various ethnic groups of West China and Eastern Tibet, their environment with special reference to dental and oral conditions. Dr. Agnew has spent the year studying in this Faculty during his furlough from West China Union University, where he is Professor of Pathology.

Dr. T. N. Scott continued the study of the anatomy and histology of the semi-edentulous and edentulous mouth.

Dr. H. S. Austin is progressing in a study of the enervation of the dental area with special reference to the difficulties in procuring local anaesthesia.

PUBLICATIONS

Faculty of Arts

DEPARTMENT OF ANTHROPOLOGY

McIlwraith, T. F. "Annual list of publications on ethnology, anthropology, and archaeology" (*Canadian Historical Review*, vol. XXII, 1941, pp. 99-109).

DEPARTMENT OF APPLIED MATHEMATICS

Chien, W. Z. and Synge, J. L. "The intrinsic theory of elastic shells and plates" (*Applied Mechanics*, Theodore von Kármán Anniversary volume, 1941, pp. 103-20).

Infeld, I. "The fourth dimension and relativity" (*Scripta Mathematica*, vol. VII, 1940, pp, 79-86).

——— "On a new treatment of some eigenvalue problems" (*Physical Review*, vol. LIX, 1941, pp. 737-47).

——— *On the theory of Brownian motion* (University of Toronto Studies, Applied Mathematics series, no. 4, 1940).

Lin, C. C. "Note on the normalization of Dirac's functions" (*Physical Review*, vol. LIX, 1941. pp. 841-2).

Stevenson, A. F. C. "The influence of the end effect on the theoretical shape of intensity curves in radio-frequency spectra" (*Physical Review*, vol. LIX, 1941, p. 767).

——— "Note on the 'Kepler Problem' in a spherical space, and the factorization method of solving eigenvalue problems" (*Physical Review*, vol. LIX, 1941, p. 842).

——— "On the theory of the magnetic resonance method of determining nuclear moments" (*Physical Review*, vol. LVIII, 1940, pp. 1061-7).

Synge, J. L. "A modified electromagnetic energy-tensor" (*Transactions of the Royal Society of Canada*, vol. XXXIV, section 3, 1940, pp. 1-27).

——— "On the electromagnetic two-body problem" (*Proceedings of the Royal Society of London*, A, vol. CLXXVII, 1940, pp. 118-39).

DEPARTMENT OF ARCHAEOLOGY

White, W. C. *Chinese temple frescoes*, Museum Studies, no. 3, published by the Royal Ontario Museum of Archaeology (Toronto, The University of Toronto Press, 1940).

DEPARTMENT OF ASTRONOMY

Bunker, A. F. "The spectra of peculiar strontium stars" (*Publications of the D.D.O.*, vol. I, no. 10).

Heard, J. F. "The orbit of the spectroscopic binary H.D. 9312" (*Publications of the D.D.O.*, vol. I, no. 7).

——— "The spectrum and the velocity variation of H.D. 142926" (*Publications of the D.D.O.*, vol. I, no. 9).

Hogg, Helen S. "Periods of variable stars in the Hercules Cluster, Messier 13" (*Publications of the American Astronomical Society*, vol. X, 1940, p. 66).

——— "Summary of sun-spot observations at Mount Holyoke College, 1940" (*Popular Astronomy*, vol. XLIX, 1941, p. 108).

Millman, P. M. "General instructions for meteor observing" (*Communications of the D.D.O.*, no. 6).

——— "The Perseid Meteor Shower, 1940" (*Communications of the D.D.O.*, no. 7).

Northcott, Ruth J. "The orbit of the spectroscopic binary H.D. 22124" (*Publications of the D.D.O.*, vol. I, no. 8).

Tidy, G. H. "The orbit of the spectroscopic binary H.D. 1826" (*Publications of the D.D.O.*, vol. I, no. 6).

DEPARTMENT OF BOTANY

Bannan, M. W. "Variability in wood structure in roots of native Ontario conifers" (*Bulletin of the Torrey Botanical Club*, vol. LXVIII, 1941, pp. 173-94).

——— "Vascular rays and adventitious root formation in *Thuja occidentalis*" (*American Journal of Botany*, vol. XXVIII, June, 1941).

Coleman, L. C. "The cytology of *Veltheimia viridifolia* Jacq" (*American Journal of Botany*, vol. XXVII, Dec., 1940).

——— "The structure of homotypic and somatic chromosomes" (*American Journal of Botany*, vol. XXVII, Oct., 1940).

——— and Hillary, B. B. "The minor coil and related phenomena as revealed by the Feulgen reaction" (*American Journal of Botany*, vol. XXVIII, June, 1941).

Hamly, D. H. *Optics of the Konimeter microscope* (Technical Bulletin, Department of Mining Engineering, University of Toronto, 1941). Pp. 13. Contains "A new lamp for visual dust counting" (2 pp.).

Hillary, B. B. "Uses of the Feulgen reaction in Cytology. II. New techniques and special applications" (*Botanical Gazette*, vol. CII, Dec., 1940).

Moore, Ruth "The 'Leaf Gap' in *Equisetum*" (*Canadian Journal of Research*, C, vol. XIX, 1941, pp. 80-4).

DEPARTMENT OF CHEMISTRY

Baer, E. F. T. and Fischer, H. O. L. "Synthesis of the d(+)−α−glycerophosphoric acid and the action of phosphatases on synthetic d(−)−, l(−)−, and dl−α−glycerophosphoric acids" (*Journal of Biological Chemistry*, vol. CXXXV, 1940, p. 321).

Barratt, H. M., Birnie, A. W., and Cohen, M. "The adsorption of water vapour on silica surfaces, by direct weighing" (*Journal of the American Chemical Society*, vol. LXII, 1940, p. 2839).

Beamish, F. E. "Chemistry of osmium and ruthenium assay" (*Canadian Mining Journal*, vol. LXII, 1941, p. 146).

——— "Chemistry of osmium and ruthenium. II" (*Canadian Mining Journal*, vol. LXII, 1941, p. 233).

Birks, A. M. and Wright, George F. "Catalysis in the formation of −methoxy mercurials" (*Journal of the American Chemical Society*, vol. LXII, 1940, p. 2412).

Brown, W. H. and Wright, George F. "Methoxy mercurials from *cis* and *trans* styryl cyanide" (*Journal of the American Chemical Society*, vol. LXII, 1940, p. 1991).

Chute, W. G. and Wright, George F. "Chloromercurifurfuryl alcohol" (*Journal of Organic Chemistry*, vol. VI, 1941, p. 157).

Eastcott, Edna V. "Contributions from the Chemical Laboratory of the University of Toronto on toxicity and reproduction of yeast, carried out under the direction of Professor W. Lash Miller, 1903-1937" (*Canadian Chemistry and Process Industries*, vol. XXV, 1941, p. 308).

Fischer, H. O. L. and Baer, E. F. T. "On the configuration of naturally occurring glycerol ethers" (*Schweizerische Medizinische Wachenschrift*, March, 1941, Festival volume for Dr. W. R. Hess).

Gordon, A. R. "Spectroscopic specific heats" (*Mechanical Engineering*, vol. LXIII, 1941, p. 129).

——— and Hollingshead, E. A. "The differential diffusion constant of calcium chloride in aqueous solution" (*Journal of Chemical Physics*, vol. IX, 1941, p. 152).

Kenrick, Frank B. "Determination of the surface of powders" (*Journal of the American Chemical Society*, vol. LXII, 1940, p. 2838).

Rae, James J. and Eastcott, Edna V. "The estimation of phosphatase in yeast" (*Journal of Biological Chemistry*, vol. CXXXVI, 1940, p. 443).

Rogers, W. J., Beamish, F. E., and Russell, D. S. "Determination of ruthenium by thionalid" (*Industrial and Engineering Chemistry*, vol. XII, 1940, p. 561).

Spencer, E. Y. and Wright, George F. "The action of sodium alkoxides on lactones" (*Journal of the American Chemical Society*, vol. LXIII, 1941, p. 1281).

Stonestreet, Gladys and Wright, George F. "Microdetermination of mercury and halogen in organomercuric halides" (*Canadian Journal of Research*, vol. XVIII, 1940, p. 246).

THOMAS, M. H. and WETMORE, F. E. W. "Configurations of the 2-butenes" (*Journal of the American Chemical Society*, vol. LXIII, 1941, p. 136).

WAYMAN, M. and WRIGHT, GEORGE F. "Continuous extraction of aqueous solutions by acetone-petroleum ether" (*Industrial and Engineering Chemistry*, Analytical edition, vol. XII, 1940, p. 91).

WRIGHT, GEORGE F. "Addition of alkali metals to the stilbenes" (*Journal of the American Chemical Society*, vol. LXI, p. 2106).

——————— "Semimicro preparation and purification of organic substances" (*Canadian Journal of Research*, vol. XVII, p. 302).

DEPARTMENT OF CLASSICS

COCHRANE, C. N. Review of *From the Stone Age to Christianity* by W. F. Albright (*Classical Weekly*, vol. XXXIV, May 5, 1941).

——————— Review of *Memory-hold-the-door* and *Canadian occasions* by John Buchan (*University of Toronto Quarterly*, vol. X, 1940, pp. 110-13).

MACKAY, L. A. "A hidden lyric fragment in Herodotus" (*Classical Journal*, vol. XXXVI, Nov., 1940).

——————— "Horace, *Satires* II, iii, 84-103" (*Classical Journal*, vol. XXXVI, Dec., 1940).

MUCKLE, J. T. (ed.) "Treatise de anima of Dominicus Gundissalinus" (*Mediaeval Studies*, 1940, pp. 23-103).

NORWOOD, G. Classical section of "Letters in Canada" (*University of Toronto Quarterly*, vol. X, 1941, pp. 327-8).

——————— "Latin and education" (*University of Toronto Quarterly*, vol. IX, 1940, pp. 491-9).

——————— "*Mox*" (*Classical Journal*, vol. XXXVI, April, 1941).

——————— Review of *Asklepiades of Samos* by William and Mary Wallace (*Canadian Forum*, May, 1941).

——————— "Virgil, *Georgics* IV, 453-527" (*Classical Journal*, vol. XXXVI, March, 1941).

OWEN, E. T. "Drama in Sophocles' *Oedipus Tyrannus*" (*University of Toronto Quarterly*, vol. X, 1940, pp. 46-59).

DEPARTMENT OF ENGLISH

BIRNEY, EARLE "Canadian poem of the year" (*Canadian Forum*, vol. XX, 1940, pp. 180-1).

——————— "Decorated with anarchisms" (*Saturday Night*, April 12, 1941, p. 33).

——————— "Sherwood Anderson: a memory" (*Canadian Forum*, vol. XXI, 1941, pp. 82-3).

BROWN, E. K. "Duncan Campbell Scott: an individual poet" (*Manitoba Arts Review*, spring issue, 1941).

——————— "Nature in Canadian poetry" (*Think*, 1941).

——————— (ed.) *Poetry; a magazine of verse* (Chicago), Canadian Number (April, 1941), with a survey of Canadian poetry 1880-1940.

——————— Poetry in "Letters in Canada, 1940" (*University of Toronto Quarterly*, vol. X, 1941, pp. 283-92).

——————— (ed.) *Representative essays of Matthew Arnold*, with an introduction (2nd ed. rev.; Toronto, Macmillan, 1940).

——————— "Thomas Wolfe, realist and symbolist" (*University of Toronto Quarterly*, vol. X, 1941, pp. 153-66).

MACGILLIVRAY, J. R. Fiction in "Letters in Canada, 1940" (*University of Toronto Quarterly*, vol. X, 1941, pp. 292-9).

PRATT, E. J. *Brébeuf and his brethren* (Toronto, Macmillan, 1940).

——————— "Come away death" and "The invaded field" (poems published in *Poetry*, Chicago, April, 1941).

SHOOK, L. K. "A technical construction in Old English" (*Mediaeval Studies*, vol. II, 1940, pp. 253-7).

WOODHOUSE, A. S. P. (ed.) "Letters in Canada, 1940" (*University of Toronto Quarterly*, vol. X, 1941, pp. 283-399).

DEPARTMENT OF FINE ART

Alford, E. J. G. "Practical art courses designed for a cultural purpose" (*Parnassus*, Jan., 1941).

——————— "Practice courses in college art departments: a survey" (*Parnassus*, Nov., 1940).

DEPARTMENT OF FRENCH

Hicks, R. K. and **Ford, H. E.** *The reading approach to French* (Toronto, Dent).

Jeanneret, F. C. A. *Intensive readings in French for Grade XII* (Toronto, Copp Clark, 1940). Pp. 236.

Lacey, A. *Basic written French, a composition book* (New York, Holt, 1941).

Walter, Felix "French-Canadian letters, 1940" (*University of Toronto Quarterly*, vol. X, 1941, pp. 305-17).

——————— Review of *Jean Racine* by A. F. B. Clark (*University of Toronto Quarterly*, vol. IX, 1940, pp. 507-11).

——————— and **Steinhauer, H.** *Omnibus of French literature from the renaissance to the end of the nineteenth century*, vols. I and II (New York and Toronto, Macmillan, 1941). Pp. vi, 631; vi, 629.

——————— and **Walter, Dorothea** *Thirty acres*, translated from *Trente arpents* by Ringuet (New York, London and Toronto, Macmillan, 1940).

Will, J. S. "The collapse of France" (*University of Toronto Quarterly*, vol. X, 1940, pp. 89-94).

DEPARTMENT OF GEOGRAPHY

Brookstone, Mildred "Hythergraphs: a geographical technique" (*The School*, Feb., 1941, pp. 539-42).

——————— "The use of graphs in geography" (*The School*, Dec., 1940, pp. 335-40).

Putnam, D. F. "The climate of the Maritime Provinces" (*Canadian Geographical Journal*, Sept., 1940).

Taylor, Griffith *An atlas of topographic control in Europe* (Toronto, The University of Toronto Press, 1940).

——————— *Australia* (London, Methuen, 1940; New York, Dutton, 1941). Pp. 450.

——————— "Mediterranean pilgrimage" (*Canadian Geographical Journal*, May, 1941).

——————— "Structure and settlement in Canada" (*Canadian Banker*, Oct., 1940).

DEPARTMENT OF GEOLOGY AND PALAEONTOLOGY

Fritz, Madeleine A. "Catalogue of types in the Royal Ontario Museum of Palaeontology" (*Contributions of the Royal Ontario Museum of Palaeontology*, no. 5, 1941).

——————— "Fenestrellina Multistriata" (*Journal of Paleontology*, vol. XV, 1941).

Langford, G. B. "The rock burst problem" (*Canadian Mining and Metallurgical Bulletin*, no. 348, April, 1941).

Moore, E. S. *American influence in Canadian mining* (Toronto, The University of Toronto Press, 1941). Pp. xxii, 144.

Moorhouse, W. W. "Geology of the Eagle Lake area" (*Ontario Department of Mines*, vol. XLVIII, part 4, 1941).

——————— "Geology of the zinc-lead deposit on Calumet Island, Quebec" (*Bulletin of the Geological Society of America*, vol. LII, 1941).

Okulitch, V. J. "Revision of type Pleospongia from Eastern Canada" (*Transactions of the Royal Society of Canada*, vol. XXXIV, section 4, 1940, pp. 75-87).

——————— and **Tovell, W. M.** "A crinoidal marking in the Dundas formation at Toronto" (*Journal of Paleontology*, vol. XV, 1941).

Russell, L. S. *Geology of the southern Alberta plains. I. Stratigraphy and structure* (Canada Department of Mines, Memoir 221, 1940).

——————— "Micrichnus tracks from the Paskapoo formation of Alberta" (*Transactions of the Royal Canadian Institute*, vol. XXIII, 1940).

Russell, L. S. "Prograngerella, a new ancestral land snail from the Upper Cretaceous of Alberta" (*Journal of Paleontology*, vol. XV, 1941).

——— "Titanotheres from the Lower Oligocene Cypress Hills formation of Saskatchewan" (*Transactions of the Royal Society of Canada*, vol. XXXIV, section 4, 1940, pp. 89-100).

DEPARTMENT OF GERMAN

Boeschenstein, H. "Hermann Stehr, der Erzähler-Mystiker" (*Monatshefte für Deutschen Unterricht*, vol. XXXIII, p. 3).

Joos, M. Review of *Semantic frequency list* by Helen S. Eaton (*Language*, vol. XVII, no. 2, 1941).

——— "Statistical studies in Gothic phonology" (*Summaries of Doctoral Dissertations*, University of Wisconsin, 1941).

——— *Wortindex zu Goethes Faust* (Madison, University of Wisconsin, 1940).

DEPARTMENT OF HISTORY

Brown, G. W. (ed.) *Readings in Canadian history* (Toronto, Dent, 1940).

Creighton, D. G. "Federal relations in Canada since 1914" (in *Canada in peace and war*, edited by C. Martin, Toronto, 1941).

Glazebrook, G. P. de T. "Canadian external relations" (in *Canada in peace and war*, edited by C. Martin, Toronto, 1941).

McInnis, E. "Canada's American problem" (*University of Toronto Quarterly*, vol. X, 1940, pp. 101-5).

——— *Oxford periodical history of the War.* V-VII (Toronto, Oxford, 1940-1).

——— Review of *Parliament* by W. I. Jennings and *The constitution of England from Queen Victoria to George VI* by A. B. Keith (*University of Toronto Law Journal*, vol. IV, 1941, pp. 209-11).

——— *The War: first year* (Toronto, Oxford, 1940).

Martin, Chester (ed.) *Canada in peace and war* (Toronto, Oxford, 1941).

——— Foreword, and first article "Trends in Canadian nationhood" (in *Canada in peace and war*, edited by C. Martin, Toronto, 1941).

——— *Trends in Canadian nationhood* (Oxford University Pamphlets on World Affairs; Toronto, Oxford, 1940).

Riddell, R. G. (ed.) *The Canadian Historical Association annual report* (Toronto, The University of Toronto Press, 1940).

——— (ed.) *Canadian portraits* (Toronto, Oxford, 1940). Pp. xii, 154.

Underhill, F. H. "Canada and the last war" (in *Canada in peace and war*, edited by C. Martin, Toronto, 1941).

DEPARTMENT OF HOUSEHOLD SCIENCE

Donald, G. H., Willard, A. C., and Brodie, J. B. "Calcium content of Canadian vegetables" (*Journal of the Canadian Dietetic Association*, vol. II, no. 3, 1940, pp. 69-76).

Lamon, F. E., Roberts, J. S., and Brodie, J. B. "A survey of sheeting on the Canadian market" (*Canadian Textile Journal*, vol. VIII, no. 5, 1941, p. 26).

Simpson, J. I. and Halliday, E. G. "Chemical and histological studies of the disintegration of cell-membrane materials in vegetables during cooking" (*Food Research*, vol. VI, no. 2, 1941, pp. 189-206).

Young, J. E., Brodie, J. B., and Willard, A. C. "Individual taste perception" (*Journal of the Canadian Dietetic Association*, vol. II, no. 4, 1941, pp. 103-16).

DEPARTMENT OF ITALIAN AND SPANISH

Buchanan, M. A. "Bibliographical notes" (*Hispanic Review*, vol. IX, no. 1).

——— *A catalogue of Spanish periodicals in Toronto* (Toronto, The University of Toronto Press, 1941).

Buchanan, M. A. "Diez Comedias (a review)" (*Modern Language Journal*, vol. XXV, no. 1).

——— "On the interpretation of Spanish poetry" (*Hispanic Review*, vol. IX, no. 1).

Goggio, Emilio "Emerson's interest in Italy and Italian literature" (*Italica*, vol. XVII, no. 3, 1940).

——— "The Italian scholarship of George Washington Greene" (*Modern Language Journal*, vol. XXV, no. 4, 1941).

Shaw, J. E. "American bibliography for 1940: Italian" (*Publications of the Modern Language Association of America*, vol. LV, pp. 1300-3).

——— "Bibliography of Italian studies in America" (*Italica*, vol. XVII, pp. 71-8, 112-17; vol. XVIII, pp. 14-23).

——— Review of *Dante et la philosophie* by Etienne Gilson (*University of Toronto Quarterly*, vol. X, 1940, pp. 113-19).

DEPARTMENT OF LAW

Auld, F. C. *The Canadian abridgement.* XX. *Extradition to gaming;* XXI. *Garnishment to highways;* XXII. *Homesteads to injunctions;* XXIII. *Insurance;* Special volume, *Abridgement of Canadian insurance cases: the annual volume for 1940* (Calgary and Toronto, Burroughs, 1940-1).

——— Review of *The law in quest of itself* by L. L. Fuller (*University of Toronto Law Journal*, vol. IV, 1941, pp. 202-3).

Finkelman, J. *Cases on the law of tort and crime* (vol. III, revised edition; Toronto, The University of Toronto Press, 1940, mimeographed).

——— "Credit unions" (*Canadian Congress Journal*, vol. XX, 1941).

——— Review of *Law in the making* by C. K. Allen (*University of Toronto Law Journal*, vol. IV, 1941, pp. 223-4).

——— Review of literature of administrative law and of industrial law (*University of Toronto Law Journal*, vol. IV, 1941, pp. 229-32; 235-6).

Fox, H. G. *Digest of Canadian patent cases for 1940-1* (Toronto, Carswell, 1941).

——— *The Canadian law of trade marks and industrial designs* (Toronto, The University of Toronto Press, 1940). Pp. lxviii, 700.

Gray, K. G. "Digest of military law" (*Regimental Journal of Toronto Military Hospital*, vol. II, April, 1941).

Hancock, J. E. M. *Cases on contract* (revised edition; Toronto, The University of Toronto Press, 1940, mimeographed).

——— "Case and comment" (*Canadian Bar Review*, vol. XVIII, 1940, pp. 642-6; 803-7).

——— Reviews of *Cases and materials in the law merchant* by P. W. Thayer, *Contracts for the benefit of third persons* by A. M. Finlay, *Handbook of Admiralty law in the United States* by G. H. Robinson (*University of Toronto Law Journal*, vol. IV, 1941, pp. 220; 206; 204).

Kennedy, W. P. M. "Laws of the British Empire" (*University of Toronto Law Journal*, vol. IV, 1941, pp. 167-8).

——— "The legal and customary powers of the president" (*George Washington University Law Journal*, May, 1941).

——— "Research and teaching in criminal science" (*University of Toronto Law Journal*, vol. IV, 1941, pp. 168-9).

——— Reviews of *The early Tudor theory of kingship* by F. Le van Baumer; *Latey's law and practice in divorce and matrimonial causes* by W. Latey and D. P. Rees; *Laws of Indiana Territory, 1801-1809*, edited by F. S. Philbrick; *Law, the state and the international community* by J. B. Scott; *The machinery of justice in England* by R. M. Jackson; *Pope's digest, 1815*, edited by F. S. Philbrick; *Turquie* by various authors (*University of Toronto Law Journal*, vol. IV, 1941, pp. 213-14; 215; 214-15; 218; 202; 214-15; 237).

——— Review of recent literature of American constitutional law (*University of Toronto Law Journal*, vol. IV, 1941, pp. 218-20).

——— Review of *The Statute of Westminster and Dominion status* by K. C. Wheare (*Journal of Comparative Legislation and International Law*, vol. XX, 1940, pp. 287-8).

Kennedy, W. P. M. "Some experiments in the teaching of law" (*Cambridge Law Journal*, vol. VII, 1941, pp. 399-402).

Laskin, B. "Case and comment" (*Canadian Bar Review*, vol. XVIII, 1940, pp. 573-8, 578-80, 581-2; 646-9, 650-3, 657-9; 725-8, 728-30, 730-2, 738-40; 810-13, 813-14).

——— "Case and comment" (*Canadian Bar Review*, vol. XIX, 1941, pp. 45-9, 49-50, 54-8; 133-9, 139-41, 141-3, 151; 219-22, 222-3, 223; 291-8, 301-3, 305).

——— "Application of the Donoghue vs. Stevenson case to realty" (*South African Law Journal*, vol. LVII, 1940, pp. 368-74).

——— Review of *Control of aliens in the British Commonwealth* by C. F. Fraser (*Canadian Bar Review*, vol. XIX, 1941, pp. 153-4).

——— Review of *Restrictive covenants affecting freehold land* by C. H. S. Preston and G. H. Newsom (*University of Toronto Law Journal*, vol. IV, 1941, pp. 223).

DEPARTMENT OF MATHEMATICS

Brauer, R. "On sets of matrices with coefficients in a division ring" (*Transactions of the American Mathematical Society*, vol. XLIX, 1941, pp. 502-48).

——— "On the Cartan invariants of groups of finite order" (*Annals of Mathematics*, vol. XLII, 1941, pp. 53-61).

——— Review of *The theory of group representations* by F. D. Murnaghan (*Bulletin of the American Mathematical Society*, vol. XLVII, 1941, pp. 359-62).

——— and Coxeter, H. S. M. "A generalization of theorems of Schönhardt and Mehmke on polytopes" (*Transactions of the Royal Society of Canada*, vol. XXXIV, section 3, 1940, pp. 29-34).

——— and Nesbitt, C. J. "On the modular characters of groups" (*Annals of Mathematics*, vol. XLII, 1941, pp. 556-90).

Coxeter, H. S. M. "The binary polyhedral groups, and other generalizations of the quaternion group" (*Duke Mathematical Journal*, vol. VII, 1940, pp. 367-79).

——— "The polytope $^{2}{}_{21}$, whose twenty-seven vertices correspond to the lines on the general cubic surface" (*American Journal of Mathematics*, vol. LXII, 1940, pp. 457-86).

——— "Regular and semi-regular polytopes. Part I" (*Mathematische Zeitschrift*, vol. XLVI, 1940, pp. 380-407).

——— "The regular sponges, or skew polyhedra" (*Scripta Mathematica*, vol. VI, 1939, pp. 240-4).

Robinson, G. deB. *The foundations of geometry* ("Mathematical Expositions," vol. I; Toronto, The University of Toronto Press, 1940). Pp. 167.

DEPARTMENT OF MINERALOGY

Berry, L. G. "Studies of mineral sulpho-salts. II. Jamesonite from Cornwall and Bolivia" (*Mineralogical Magazine*, vol. XXV, 1940, pp. 597-608).

——— "Studies of mineral sulpho-salts. III. Boulangerite and 'epiboulangerite'" (*University of Toronto Studies*, Geological series, no. 44, 1940, pp. 5-19).

——— "Studies of mineral sulpho-salts. IV. Galenobismutite and 'lillianite'" (*American Mineralogist*, vol. XXV, 1940, pp. 726-34).

Meen, V. B. "The composition of the Maria Elena meteorite" (*American Journal of Science*, vol. CCXXXIX, 1941, p. 412).

Peacock, M. A. "On dyscrasite and antimonial silver" (*University of Toronto Studies*, Geological series, no. 44, 1940, pp. 31-46).

——— "Les rayons X en minéralogie" (*Annales de l'Association Canadienne-Française pour l'Avancement des Sciences*, vol. VI, 1940, p. 93).

——— and Berry, L. G. "Röntgenographic observations on ore minerals" (*University of Toronto Studies*, Geological series, no. 44, 1940, pp. 47-69).

——— and Dadson, A. S. "On rammelsbergite and pararammelsbergite: distinct forms of nickel diarsenide" (*American Mineralogist*, vol. XXV, 1940, pp. 561-77).

Smith, F. G. "Variation in the electrical conductivity of pyrite" (*University of Toronto Studies*, Geological series, no. 44, 1940, pp. 83-93).

DEPARTMENT OF ORIENTAL LANGUAGES

Meek, T. J. "The accusative of time in Amos 1:1" (*Journal of the American Oriental Society*, vol. LXI, p. 63).

——— "The Hebrew accusative of time and place" (*Journal of the American Oriental Society*, vol. LX, pp. 224-33).

——— "The metrical structure of II Kings 19:20-28" (*Crozer Quarterly*, vol. XVIII, pp. 126-31).

——— Review of *From the Stone Age to Christianity* by W. F. Albright (*Journal of the American Oriental Society*, vol. LXI, pp. 64 ff.).

Staples, W. E. "The reading of Hebrew" (*American Journal of Semitic Languages and Literatures*, April, 1941).

Taylor, W. R. "Freedom and contemporary thought" (*University of Toronto Quarterly*, vol. IX, 1940, pp. 397-406).

——— "A new Samaritan inscription and the dating of Samaritan inscriptions" (*Bulletin of the American Schools of Oriental Research*, no. 81, Feb., 1941).

——— *Poetical Books of the Old Testament* (translations). (American Standard Bible Committee, Yale University, 1941).

——— Review of *Philo and the oral law* by S. Belkin (*University of Toronto Law Journal*, vol. IV, 1941, pp. 208-9).

——— Review of *Das Talmudische Recht* by S. Rubin (*University of Toronto Law Journal*, vol. IV, 1941, pp. 207-8).

DEPARTMENT OF PHYSICS

Brant, A. A. "Exploration for hematite at Steep Rock Lake" (*Engineering Journal*, Nov., 1940).

Cheng, C. K. "The dielectric constants of some metallic sulphates containing various amounts of water of crystallization" (*Philosophical Magazine*, vol. XXX, section 7, 1940, p. 505).

Gilchrist, L. "Recent magnetic and electrical investigations on the surface and in drill holes in regions containing gas, oil and other minerals, and the correlation of the results of the investigations" (*Proceedings of the 9th Pennsylvania Mineral Industries Conference, Petroleum and Natural Gas Section*, bulletin 30; Mineral Industries Experiment Station, Pennsylvania State College School of Mineral Industries, State College, Pennsylvania, 1940).

——— and Clark, A. R. "The use of mathematics in the delineation of magnetic and electric anomalies" (*Transactions of the American Geophysical Union*, 1940).

McCutcheon, J. W., Crawford, M. F., and Welsh, H. L. "The isomeric structure of the C_{18} unsaturated acids from their raman and infra red spectra" (*Oil and Soap*, vol. XVIII, no. 1, 1941).

Misener, A. D. "The viscosity of helium. II." (*Rheology Bulletin*, vol. XII, no. 1, 1941).

Prebus, A. "Improved pole piece construction of the objective lens of a magnetic electron microscope" (*Canadian Journal of Research*, A, vol. XVIII, 1940, pp. 175-7).

DEPARTMENT OF POLITICAL ECONOMY

Brady, Alexander "Democracy in the overseas Dominions" (in *Canada in peace and war*, edited by C. Martin, Toronto, 1941).

——— "The Empire and world order" (*University of Toronto Quarterly*, vol. X, 1940, pp. 105-9).

——— "Political parties and nationalism in South Africa" (*University of Toronto Quarterly*, vol. X, 1941, pp. 139-52).

——— "Report of the Royal Commission on Dominion-Provincial Relations" (*Canadian Historical Review*, vol. XXI, 1940, pp. 245-53).

——— Social studies in "Letters in Canada, 1940" (*University of Toronto Quarterly*, vol. X, 1941, pp. 333-45).

Innis, H. A. "The Commerce Course" (*Commerce Journal*, March, 1941, pp. 1-2).

——— "Excess capacity as a factor in Canadian economic history" (*Manitoba Arts Review*, spring issue, 1941).

INNIS, H. A. Introduction to *American influence in Canadian mining* by E. S. Moore (Toronto, The University of Toronto Press, 1941).

——— Introduction to *Minutes of Council, Northern Department of Rupert Land, 1821-31*, edited by R. Harvey Fleming. Publications of the Champlain Society, Hudson's Bay Company series 3. (Toronto, The Champlain Society, 1941). Pp. lxxviii, 480.

——— "Recent books on the Arctic" (*Canadian Historical Review*, vol. XXII, 1941, pp. 187-93).

——— "The Rowell-Sirois report" (*Canadian Journal of Economics and Political Science*, vol. VI, 1940, pp. 562-70).

——— "Trends in Canadian economics" (in *Canada in peace and war*, edited by C. Martin, Toronto, 1941).

MACGREGOR, D. C. "Gross and net investment in Canada—tentative estimates" (*Canadian Journal of Economics and Political Science*, vol. VII, 1941, pp. 39-68).

DEPARTMENT OF PSYCHOLOGY

COSGRAVE, G. P. "The causes of reading difficulties" (*Canadian Journal of Optometry*, vol. II, pp. 84-7, 235-7).

——— "The legibility of print" (*The Reflex*, 1940, pp. 25-8).

——— "They're only human" (*National Safety News*, vol. XLIII, no. 2).

GRIFFIN, J. D. M. "Family relationships in time of war" (*Canadian Welfare*, vol. XVI, no. 6, 1940).

——— "The teacher looks at herself" (*Special Class Teacher*, vol. XV, no. 2, 1941; *The School*, vol. XXIV, no. 7, 1941).

LINE, W. "William McDougall, 1871-1938" (*American Journal of Psychiatry*, vol. XCVII, no. 3, 1940, pp. 633-49).

MYERS, C. R. and GIFFORD, E. V. "Measuring abnormal pattern on the revised Stanford-Binet scale" (*Bulletin of the Canadian Psychological Association*, April, 1941).

ROGERS, K. H. "Social work with boys" (*Canadian Public Health Journal*, Aug., 1940).

——— "The volunteer in social work with boys" (*Canadian Welfare*, autumn issue, 1940).

SALTER, M. D. *An evaluation of adjustment based upon the concept of security* (University of Toronto Studies, Child development series, no. 18, 1940).

DEPARTMENT OF ZOOLOGY

ARMSTRONG, C. W. J. and FISHER, K. C. "A comparison of the effects of the respiratory inhibitors azide and cyanide on the frequency of the embryonic fish heart" (*Journal of Cellular and Comparative Physiology*, vol. XVI, 1940, p. 103).

COVENTRY, A. F. "Dessication in southern Ontario" (*Transactions of the Royal Society of Canada*, vol. XXXIV, section 5, 1940, pp. 15-23).

CRAIGIE, E. H. "The area of distribution of the middle cerebral artery in certain birds" (*Transactions of the Royal Society of Canada*, vol. XXXIV, section 5, 1940, pp. 25-37).

——— "The capillary bed of the central nervous system of *Dermophis* (*Amphibia, Gymnophiona*)" (*Journal of Morphology*, vol. LXVII, pp. 477-87).

——— "The cerebral cortex in Palaeognathine and Neognathine birds" (*Journal of Comparative Neurology*, vol. LXXIII, pp. 179-234).

——— "The cerebral cortex of the penguin" (*Journal of Comparative Neurology*, vol. LXXIV, pp. 353-66).

——— "Vascularization in the brains of reptiles. I. The painted turtle, *Chrysemys picta marginata* Agassiz" (*Journal of Comparative Neurology*, vol. LXXIV, pp. 247-64).

DYMOND, J. R. "Atlantic salmon in Ungava Bay" (*Canadian Field-Naturalist*, vol. LV, 1941, pp. 19-20).

——— "Pacific salmon in the Arctic ocean" (*Proceedings of the Sixth Pacific Congress*, 1941).

——— "The study of animal life in Canada" (*Proceedings of the Royal Canadian Institute*, vol. V, 1940, pp. 17-19).

Dymond, J. R. "Wild animals in parks must live according to nature" (*Saturday Night*, July 6, 1940).

Engelbert, V. "The development of twin embryo sacs, embryos, and endosperm in Poa arctica R. Br." (*Canadian Journal of Research*, vol. XIX, 1941, pp. 135-44).

——————— "Reproduction in some Poa species" (*Canadian Journal of Research*, vol. XVIII, 1940, pp. 518-21).

Fisher, K. C. and Öhnell, R. "The steady state frequency of the embryonic fish heart at different concentrations of cyanide" (*Journal of Comparative Physiology*, vol. XVI, 1940, p. 1).

Ford, N. "A fly which parasitizes the young of man and animals" (*Fur Trade Journal of Canada*, vol. XVIII, 1941, p. 1).

————, Brown, A., and McCreary, J. F. "Evidence of monozygosity and disturbance of growth in twins with pyloric stenosis" (*American Journal of Diseases of Children*, vol. LXI, 1941, p. 41).

————, Ross, M. A., and Brown, A. "Primogeniture as an etiologic factor in pyloric stenosis" (*American Journal of Diseases of Children*, vol. LXI, 1941, p. 747).

Harkness, W. J. K. "Catches of speckled trout from the plantings of hatchery-raised fish in private waters of Ontario" (*Transactions of the American Fisheries Society*, vol. LXX, 1941, pp. 397-403).

——————————— "The limnology of Lake Mize, Florida" (*Proceedings of the Florida Academy of Science*, vol. V, 1940).

——————————— "The university and conservation" (*Phi Beta Kappa Addresses*, series 3, University of Florida, Gainesville, 1941).

Huntsman, A. G. "Cyclical abundance and birds versus salmon" (*Journal of the Fisheries Research Board of Canada*, vol. V, no. 3, 1941, pp. 227-35).

————————— "Fresh sea food on inland tables" (*Queen's Quarterly*, vol. XVII, no. 3, 1940, pp. 347-55).

Langford, R. R. and Martin, W. R. "Seasonal variations in stomach contents and rate of growth in a population of yellow perch" (*Transactions of the American Fisheries Society*, vol. LXX, 1940).

Martin, R. D. C. and Fisher, K. C. "The effect of cyanide upon the viability of embryos and adults" (*Proceedings of the American Physiological Society*, 1941, p. 192).

Nesbitt, H. H. J. "A comparative morphological study of the nervous system of the Orthoptera and related orders" (*Annals of the Entomological Society of America*, vol. XXXIV, no. 1, 1941, pp. 51-81).

Walker, E. M. "A new Gomphus from Louisiana" (*Entomological News*, vol. LI, no. 7, 1940, pp. 194-6).

———————— "New records of Odonata from Manitoba" (*Canadian Entomologist*, vol. LXXIII, no. 2, 1941, pp. 35-6).

Faculty of Medicine

DEPARTMENT OF ANATOMY

Ham, A. W. "The new magic bullets of chemotherapy" (*Saturday Night*, May 24, 1941, p. 28).

DEPARTMENT OF BIOCHEMISTRY

Collier, H. B. "The problem of plastein formation. I. The formation of a plastein by papain" (*Canadian Journal of Research*, B, vol. XVIII, 1940, pp. 255-63).

———————— "The problem of plastein formation. II. The chemical changes involved in plastein formation by papain and by pepsin" (*Canadian Journal of Research*, B, vol. XVIII, 1940, pp. 272-80).

———————— "The problem of plastein formation. III. A note on the complexity of peptic plastein in urea solution" (*Canadian Journal of Research*, B, vol. XVIII, 1940, pp. 305-8).

Fishman, W. H. "Studies on B-glucuronidase. III. The increase in B-glucuronidase activity of mammalian tissues induced by feeding glucuronidogenic substances" (*Journal of Biological Chemistry*, vol. CXXXVI, no. 1, 1940).

Manery, J. F. and Solandt, D. Y. "Electrolyte changes in traumatic shock" (*Proceedings of the American Physiological Society*, 1941, p. 188).

DEPARTMENT OF HYGIENE AND PREVENTIVE MEDICINE

Dolman, C. E. and Wilson, R. J. "The kitten test for staphylococcus enterotoxin" (*Canadian Public Health Journal*, vol. XXXI, 1940, p. 68).

Fraser, D. T., Davey, E. L., and Halpern, K. C. "Antitoxin response to concentrated toxoid applied to the nasal mucous membrane" (*Canadian Public Health Journal*, vol. XXX, 1940, p. 376).

Hare, R. "The expulsion of haemolytic streptococci by nasopharyngeal carriers" (*Canadian Public Health Journal*, vol. XXXI, 1940, p. 539).

——— "Haemolytic streptococci in normal people and carriers" (*Lancet*, vol. I, 1941, p. 85).

——— "The present status of influenza virus" (*Canadian Public Health Journal*, vol. XXXII, 1941, p. 49).

——— "The prevention of streptococcal infection of wounds" (*Canadian Public Health Journal*, vol. XXXI, 1940, p. 407).

Kuitunen-Ekbaum, E. "The incidence of human trichinosis in Toronto" (*Canadian Public Health Journal*, vol. XXXII, 1941, p. 78).

——— "Intestinal parasites in children in Toronto" (*American Journal of Diseases of Children*, vol. LX, 1940, pp. 518-25).

——— "Phenothiazine in the treatment of enterobiasis" (*Canadian Public Health Journal*, vol. XXXII, 1941, pp. 308-13).

——— "Report of a case of Dipylidium cannum in a child" (*Canadian Public Health Journal*, vol. XXXII, 1941, p. 78).

——— "A survey of entozoa in adults in a Toronto hospital" (*Canadian Medical Association Journal*, vol. XLIII, 1940, pp. 451-3).

Moloney, P. J. "The phosphatase test" (*Canadian Public Health Journal*, vol. XXXII, 1941, pp. 213-15).

Wilson, R. J. "Some improvements in the preparation of staphylococcus toxoid (abstract)" (*Canadian Public Health Journal*, vol. XXXI, 1940, p. 23).

——— "Staphylococcal food poisoning" (*University of Toronto Medical Journal*, vol. XVIII, 1941, pp. 190-3).

——— "The staphylococcus" (*Canadian Journal of Medical Technology*, vol. II, 1940, p. 49).

——— "Staphylococcus toxin" (*Canadian Journal of Medical Technology*, vol. II, 1940, p. 119).

DEPARTMENT OF MEDICAL RESEARCH

Beveridge, J. M. R. and Lucas, C. C. "A note on serum cholinesterase variability in male and female rats" (*Science*, vol. XCIII, 1941, pp. 356-7).

Lucas, C. C. "Chemical warfare" (*Canadian Journal of Medical Technology*, vol. III, no. 1, Dec., 1940).

——— and Beveridge, J. M. R. "The analysis of hair keratin. I. A method for the quantitative removal of cystine from keratin hydrolysates" (*Biochemical Journal*, vol. XXXIV, 1940, pp. 1356-66).

McEachern, C. G., Smith, F. H., and Manning, G. W. "The effect of intravenous injection of papaverine hydrochloride upon the mortality resulting from sudden occlusion of coronary arteries in dogs" (*American Heart Journal*, vol. XXI, 1941, pp. 25-30).

Rudney, H. "The utilization of 1-glucose by mammalian tissues and bacteria" (*Science*, vol. XCII, 1940, pp. 112-13).

Smith, F. H., McEachern, C. G., and Hall, G. E. "The effect of the intravenous administration of quinidine sulfate on the development of ventricular fibrillation following sudden occlusion of the circumflex branch of the left coronary artery" (*American Heart Journal*, vol. XX, 1940, pp. 620-6).

Townsend, G. F. and Lucas, C. C. "Chemical examination of the lipid fraction of Royal jelly" (*Science*, vol. XCII, 1940, p. 43).

———————————— "The chemical nature of Royal jelly" (*Biochemical Journal*, vol. XXXIV, 1940, pp. 1155-62).

DEPARTMENT OF MEDICINE

Bagnall, A. W. "The use and abuse of dagenan" (*University of Toronto Medical Journal*, vol. XVIII, 1940, p. 5).

Bates, G. "What are we fighting for?" (*Health*, vol. IX, 1941, p. 15).

Boyer, G. F. "The psychoneuroses of war" (*Canadian Medical Association Journal*, vol. XLIII, 1940, p. 53).

Brown, W. Hurst "The use of the newer drugs" (*Canadian Medical Association Journal*, vol. XLIV, 1941, p. 485).

Campbell, W. R. "A dithizone test for lead in urine" (*Canadian Physiological Society*, Nov., 1940).

Cleghorn, R. A. "Recognition and treatment of Addison's disease" (*Canadian Medical Association Journal*, vol. XLIV, 1941, p. 581).

———————— Armstrong, C. W. J., Austen, D. C., and McVicar, G. A. "Response of the denervated nictitating membrane and of blood pressure to sympathetic nerve stimulation in adrenalectomized cats" (*American Journal of Physiology*, vol. CXXXII, 1941, p. 542).

———————— Fowler, J. L. A., and Clarke, A. P. W. "The effect of some pressor drugs on healthy adrenalectomized dogs" (*Canadian Physiological Society*, Nov., 1940).

Dauphinee, J. A. and Hepburn, J. "Chronic cyanosis: pathological physiology in two cases" (*Canadian Physiological Society*, Nov., 1940).

Graham, J. W. "Oral manifestations of vitamin deficiency" (*Canadian Dental Journal*, 1940).

Hamilton, F. C. "Significance of gallop rhythm" (*Canadian Medical Association Journal*, vol. XLIV, 1941, p. 260).

Parks, A. E. and Shanks, G. "Studies on experimental lesions in the kidneys of rabbits" (*Journal of Laboratory and Clinical Medicine*, vol. XXVI, 1941, pp. 950-6).

Prendergast, D. J. and Phair, W. B. "A case of psittacosis" (*Canadian Medical Association Journal*, vol. XLIV, 1941, p. 597).

Richardson, J. C. and Hyland, H. H. "Intracranial aneurysms: a clinical and pathological study of subarachnoid and intra-cerebral haemorrhage caused by berry aneurysms" (*Medicine*, vol. XX, 1941, pp. 1-83).

Wightman, K. J. R. "Some general principles of sulphonamide therapy" (*Ontario Medical Association Bulletin*, vol. VIII, 1941, p. 118).

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

Cosbie, W. G. "Pitfalls in gynaecological diagnosis" (*Canadian Medical Association Journal*, vol. XLIV, 1941, pp. 133-6).

Frawley, N. D. "The treatment of disproportion" (*Canadian Medical Association Journal*, vol. XLIV, 1941, pp. 38-40).

Goodwin, J. C. "Gonococcal pelvic inflammation" (*Canadian Medical Association Journal*, vol. XLIV, 1941, pp. 136-41).

Henderson, D. N. "Diagnostic curettage" (*Bulletin of the Academy of Medicine*, Toronto, vol. XIV, no. 5).

————————— "Granulosa and theca cell tumours of the ovary" (*Canadian Medical Association Journal*, vol. XLIV, 1941, pp. 20-3).

————————— "The incidence of endometrial hyperplasia with uterine fibroids and external and internal endometriosis (adenomyosis)" (*American Journal of Obstetrics and Gynaecology*, April, 1941).

JOHNSTON, H. W. "The termination of pregnancy before the period of viability by abdominal hysterotomy through the lower uterine segment" (*Canadian Medical Association Journal*, vol. XLIII, 1940, pp. 552-4).

LOW, D. M. "Caesarean section" (*Canadian Medical Association Journal*, vol. XLIV, 1941, pp. 280-4).

WATT, L. "Benign lesions of the cervix" (*Canadian Medical Association Journal*, vol. XLIV, 1941, pp. 141-4).

DEPARTMENT OF OTO-LARYNGOLOGY

STRACHAN, J. GRANT "Atrophic rhinitis or ozeana in children" (*Canadian Medical Association Journal*, vol. XLIV, 1941, pp. 158-61).

WISHART, D. E. S. Revision of the section "The surgery of the ear" in *System of surgery* by Dean Lewis.

——————— "Rhinology in children. Résumé of and comments on the literature for 1939" (*Laryngoscope*, Aug., 1940).

DEPARTMENT OF PAEDIATRICS

ALFORD, KENNETH M. "Prognosis and treatment of acute diffuse peritonitis in children since the advent of chemotherapeutic drugs" (*Archives of Disease in Childhood*, vol. XVI, 1941, p. 43).

AUGER, W. J. "A laboratory investigation of pneumonia among infants and children" (*Archives of Disease in Childhood*, vol. XVI, 1941, p. 35).

BROWN, ALAN "Abdominal conditions in children, with special reference to the mechanical appendix" (*Texas State Journal of Medicine*, vol. XXXVI, 1940, p. 482).

——————— "A consideration of some common pediatric problems" (*Texas State Journal of Medicine*, vol. XXXVI, 1941, p. 778).

——————— "A decade of paediatric progress" (*Canadian Medical Association Journal*, vol. XLIII, 1940, p. 305).

DELFS, GENEVIEVE "Helium-oxygen inhalation: a recent advance in the treatment of laryngitis and tracheitis" (*Archives of Disease in Childhood*, vol. XVI, 1941, p. 52).

DRAKE, T. G. H. "The wet nurse in France in the eighteenth century" (*Bulletin of the History of Medicine*, vol. VIII, no. 7, 1940, p. 934).

EBBS, J. H. and SCOTT, W. A. "Blood phosphatase in pregnancy as an indication of twins" (*American Journal of Obstetrics and Gynaecology*, vol. XXXIX, 1940, p. 1043).

ERB, I. H. and SUMMERFELDT, PEARL "Congenital anomalies of the urinary tract in children and infants and their relation to chronic pyuria" (*Canadian Medical Association Journal*, vol. XLIV, 1941, p. 14).

FORD, NORMA, MCCREARY, J. F., and BROWN, ALAN "Evidence of monozygosity and disturbance of growth in two pairs of twins with pyloric stenosis" (*American Journal of Diseases of Children*, vol. LXI, 1941, p. 41).

———————, ROSS, MARY A., and BROWN, ALAN "Primogeniture as an etiologic factor in pyloric stenosis" (*American Journal of Diseases of Children*, vol. LXI, 1941, p. 747).

HAWKE, WILLIAM A. "The treatment of convulsions with dilantin sodium" (*Canadian Medical Association Journal*, vol. XLIII, 1940, p. 157).

JACKSON, J. W. "Nephrolithiasis in children" (*Archives of Disease in Childhood*, vol. XVI, 1941, p. 55).

KEITH, JOHN D. "Rheumatic heart disease—a public health problem" (*Canadian Public Health Journal*, vol. XXXII, 1941, pp. 95-102)

MCCAUSLAND, D. J. M. "Hodgkin's disease in children" (*Archives of Disease in Childhood*, vol. XVI, 1941, p. 59).

MCKINLEY, HELEN "Icterus gravis neonatorum with erythroblastosis" (*Archives of Disease in Childhood*, vol. XVI, 1941, p. 63).

MORGAN, E. A. "The present status of the thymus gland in paediatric practice" (*Canadian Medical Association Journal*, vol. XLIV, 1941, p. 41).

ROSS, JOHN R., HAWKE, WILLIAM A., and BROWN, ALAN "Gargoylism" (*Archives of Disease in Childhood*, vol. XVI, 1941, p. 71).

Ross, John R., Monypenny, Doris, and Jackson, S. H. "The effect of cooking on the digestibility of cereals. II" (*Journal of Paediatrics*, vol. XVIII, 1941, p. 395).

Savage, Howard "The development of vitamin K and its clinical uses in the neonatal period" (*Archives of Disease in Childhood*, vol. XVI, 1941, p. 67).

Silverthorne, Nelles, Brown, Alan, and Auger, W. J. "Pneumonia in infancy and childhood" (*Canadian Medical Association Journal*, vol. XLIV, 1941, p. 496). *See also* under School of Hygiene and Connaught Laboratories.

Snelling, C. E. "Technique in establishing the diagnosis of genito-urinary malformation" (*Canadian Medical Association Journal*, vol. XLIV, 1941, p. 269).

———— "Vitamin K in haemorrhagic disease of the newborn infant" (*Journal of Paediatrics*, vol. XVII, 1940, p. 615).

Tisdall, F. F. "Canadian wheat, flour and bread" (*Canadian Medical Association Journal*, vol. XLIII, 1940, p. 474).

DEPARTMENT OF PATHOLOGICAL CHEMISTRY

Gornall, A. G. and Hunter, A. "A method for the determination of citrulline and its application" (*Canadian Chemistry*, vol. XXV, p. 98).

Hunter, A. "Kidney function tests and their interpretation" (*Bulletin of the Academy of Medicine*, Toronto, vol. XIV, 1941, p. 149).

DEPARTMENT OF PATHOLOGY AND BACTERIOLOGY

Blanchard, A. J. "The pathology of glomus tumours" (*Canadian Medical Association Journal*, vol. XLIV, 1941, pp. 357-60).

———— and Jaimet, C. H. "Weil's disease" (*Canadian Medical Association Journal*, vol. XLIII, 1940, pp. 19-23).

Boyd, William "Classification of epidermoid growths with some remarks on classification in general" (*Canadian Journal of Medical Technology*, vol. III, 1941, pp. 51-5).

———— *Introduction to medical science* (2nd ed., Philadelphia, Lea and Febiger, 1941).

Linell, Eric A. "Late effects of subdural haemorrhage" (*Lancet*, vol. II, 1940, pp. 514-16).

———— "The types of intracranial haemorrhage caused by head injury" (*University of Toronto Medical Journal*, vol. XVIII, 1941, pp. 113-17).

Robinson, W. L. "Pathology of parathyroid adenoma" (*Bulletin of the Academy of Medicine*, Toronto, vol. XIV, 1940, pp. 10-12).

Shanks, G., Barclay, L. T., and Arnold, Grace "Blood transfusions and the use of stored blood" (*Canadian Hospital*, vol. XVII, 1940, p. 36).

———— and Parks, A. E. "Studies on experimental lesions in the kidneys of rabbits" (*Journal of Laboratory and Clinical Medicine*, vol. XXVI, 1941, pp. 950-6).

Stecker, J. F., Greey, P. H., and Paul, E. I. "Laughlen test for syphilis" (*Archives of Dermatology and Syphilology*, vol. XLIII, 1941, pp. 317-22).

———— and Robinson, W. L. "Dermatofibroma" (*Archives of Dermatology and Syphilology*, vol. XLIII, 1941, pp. 498-503).

DEPARTMENT OF PHARMACOLOGY

Bonnycastle, D. D. and Ferguson, J. K. W. "The action of pitocin and adrenalin on different segments of the rabbit uterus" (*Journal of Pharmacology and Experimental Therapeutics*, vol. LXXII, 1941, p. 90).

Ferguson, J. K. W. "Changes in respiration on inflation and deflation of the chest" (*American Journal of Physiology*, vol. CXXX, 1940, p. 675).

———— and Black, E. C. "The transport of CO_2 in the blood of certain freshwater fishes" (*Biological Bulletin*, vol. LXXX, 1941, p. 139).

Hamdi, T. N. and Ferguson, J. K. W. "Hemolytic action of fluorides on certain nucleated erythrocytes" (*Proceedings of the Society for Experimental Biology and Medicine*, vol. XLIV, 1940, p. 427).

HENDERSON, V. E. (translator) *Medical guide for flying personnel* by Heinz von Diringshofen (Toronto, The University of Toronto Press, 1940). Pp. 102.

——————— "The substances causing vasoconstriction" (*Anesthesiology*, vol. I, 1940, p. 323).

LUCAS, G. H. W. and BROWN, W. E. "Further studies with ethyl normal propyl ether" (*Canadian Medical Association Journal*, vol. XLIII, 1940, p. 526).

DEPARTMENT OF PHYSIOLOGY

BEST, C. H. "Heparin and thrombosis" (in *Chemistry and Medicine*, University of Minnesota Press, 1940, p. 121).

——————— "In memoriam" (*Canadian Medical Association Journal*, vol. XLIV, 1941, p. 327).

——————— "Sir Frederick Banting" (*Nature*, vol. CXLVII, 1941, pp. 535-6).

——————— "Sir Frederick Banting" (*Science*, vol. XCIII, 1941, pp. 248-9).

——————— "Sir Frederick Banting" (*University of Toronto Quarterly*, vol. X, 1941, pp. 249-54). *See also* under School of Hygiene and Connaught Laboratories.

CAMPBELL, J. and KEENAN, H. C. "The substance of the anterior pituitary gland which increases liver fat" (*American Journal of Physiology*, vol. CXXXI, 1940, p. 27).

CHUTE, A. L. and WATERS, E. T. "The effect of rattlesnake venom (Crotalin) on the plasma histamine of the rabbit" (*American Journal of Physiology*, vol. CXXXII, 1941, p. 552).

FIDLAR, E. and WATERS, E. T. "The origin of platelets; their behavior in the heart-lung preparation" (*Journal of Experimental Medicine*, vol. LXXIII, 1941, p. 299).

HAIST, R. E., CAMPBELL, J., and BEST, C. H. "The prevention of diabetes" (*New England Journal of Medicine*, vol. CCXXIII, 1940, pp. 607-15).

JAQUES, L. B. *See* under School of Hygiene and Connaught Laboratories.

MANERY, J. F. and SOLANDT, D. Y. "Electrolyte changes in traumatic shock" (*American Journal of Physiology*, vol. CXXXIII, 1941, p. 376).

SOLANDT, D. Y. "Denervated skeletal muscle" (*Journal of the Canadian Physiotherapy Association*, vol. I, 1940, pp. 1-3).

——————— and MAGLADERY, J. W. "A comparison of the effects of upper and lower motor neurone lesions on skeletal muscle" (*American Journal of Physiology*, vol. CXXXIII, 1941, p. 456).

TAYLOR, N. B. "The applied physiology of the kidney" (*Bulletin of the Academy of Medicine*, Toronto, vol. XIV, 1941, p. 133).

——————— and WATERS, E. T. "The use of isinglass as a transfusion fluid in haemorrhage and shock" (*Canadian Medical Association Journal*, vol. XLIV, 1941, p. 547).

WATERS, E. T. "Immunology of serum" (*University of Toronto Medical Journal*, vol. XVIII, 1941, p. 169).

——————— and MARKOWITZ, J. "Typical anaphylaxis in the dog in the absence of the liver" (*American Journal of Physiology*, vol. CXXX, 1940, p. 379).

DEPARTMENT OF PSYCHIATRY

DEWAN, J. G. "The etiology of pellagra" (*American Journal of Psychiatry*, vol. XCVII, March, 1941).

FARRAR, C. B. "Psychiatry" (in *New international year book, 1940*, New York, Funk and Wagnalls).

PROCTOR, L. D. (with FRANKS, W. R.) "Comparative observations on the methylgloxal activity of the blood in mentally normal and mentally ill individuals" (*American Journal of Psychiatry*, vol. XCVII, May, 1941).

STOGDILL, C. B. (with AMOS, H. E.) *Canadian intelligence examination* (Toronto, Ryerson, 1940).

DEPARTMENT OF SURGERY

COUCH, J. H. *Emergencies in war* (Toronto, Canadian Red Cross Society, 1941).

——————— "First aid and transportation of fractures" (*Manitoba Medical Review*, vol. XX, pp. 200-3).

Couch, J. H. "Glomus tumours: clinical aspect and physiology" (*Canadian Medical Association Journal*, vol. XLIV, 1941, pp. 356-7).

——————— "Hyperparathyroidism: two case reports" (*Bulletin of the Academy of Medicine*, Toronto, vol. XIV, 1940, pp. 7-10).

——————— "Local anaesthesia in reduction of fractures" (*University of Toronto Medical Journal*, vol. XVIII, 1940, pp. 59-61).

——————— "Two fractures of the neck of femur" (*Canadian Medical Association Journal*, vol. XLIII, 1940, pp. 31-4).

Foulds, G. S. "Diagnosis and treatment of pyelonephritis" (*Bulletin of the Academy of Medicine*, Toronto, vol. XIV, no. 8).

——————— "Rational treatment of ureteral stone" (*Surgery, Gynaecology, and Obstetrics*, vol. LXXI, pp. 110-111).

Gallie, W. E. "The experience of the Canadian Army and Pensions Board with amputations of the lower extremity" (*Annals of Surgery*, vol. CXIII, June, 1941).

——————— "War wounds" (*Canadian Medical Association Journal*, vol. XLIV, 1941, pp. 338-44).

Graham, R. R. "A technique for total gastrectomy" (*Surgery*, Aug., 1940).

Harris, R. I. "The role of physiotherapy in the after care of arthroplasty of the hip with vitallium cup" (*Journal of the Canadian Physiotherapy Association*, Dec., 1940).

——————— and Coulthard, H. S. "End results of treatment of Pott's disease" (*Journal of Bone and Joint Surgery*, July, 1940).

Janes, R. M. "The treatment of tumours of the salivary glands by radical excision" (*Canadian Medical Association Journal*, vol. XLIII, 1940, pp. 554-9).

Laird, R. C. "Complete rupture of the supraspinatus tendon" (*Bulletin of the Academy of Medicine*, Toronto, vol. XIV, no. 5).

LeMesurier, A. B. "The treatment of fractures of the shaft of the femur in children" (*American Journal of Surgery*, July, 1940).

——————— "The treatment of muscle paralysis in poliomyelitis" (*University of Toronto Medical Journal*, vol. XVIII, 1941, pp. 163-8).

MacFarlane, J. A. "Cancer of the rectum" (*Canadian Medical Association Journal*, vol. XLIII, 1940, pp. 467-9).

——————— "Multiple emboli treated surgically" (*British Medical Journal*, vol. I, 1940, p. 971).

——————— "The trend in military surgery in the first year of the War" (*Canadian Medical Association Journal*, vol. XLIII, 1940, pp. 540-3).

Mitchell, D. R. and Cote, F. H. "Sodium sulfathiazole in urology" (*Canadian Medical Association Journal*, vol. XLIV, 1941, pp. 240-4).

——————— Greig, C. H., and Uren, J. L. "Sulfathiazole therapy of gonorrhoea" (*Canadian Medical Association Journal*, vol. XLIV, 1941, pp. 237-40).

——————————————— "The treatment of gonorrhoea by chemotherapy" (*Canadian Medical Association Journal*, vol. XLII, 1940, pp. 533-4).

Murray, D. W. G. "Fixation of dislocations of the acromio-clavicular joint and rupture of coraco-clavicular ligaments" (*Canadian Medical Association Journal*, vol. XLIII, 1940, pp. 270-1).

——————— "Heparin in thrombosis and blood vessel surgery" (*Surgery, Gynaecology and Obstetrics*, vol. LXXII, 1941, pp. 340-4).

——————— "A method of fixation for fracture of the clavicle" (*Journal of Bone and Joint Surgery*, vol. XXII, no. 3, 1940, pp. 616-20).

Pearse, R. and McComb, R. A. "The treatment of infiltrating tumours of the bladder" (*Canadian Medical Association Journal*, vol. XLIII, 1940, pp. 106-10).

Ryerson, E. S. "Physical activity and fatigue in relation to health: the value of physical education to nurses" (*Canadian Hospital*, May, 1941).

Wansbrough, R. M. "Appendicitis" (*Canadian Medical Association Journal*, vol. XLIII, 1940, pp. 147-8).

Wilkinson, F. R. "Acute haematogenous osteomyelitis in children" (*University of Toronto Medical Journal*, vol. XVIII, 1941, pp. 256-9).

DEPARTMENT OF THERAPEUTICS

BALFOUR, G. R. "Anaesthesia" (*University of Toronto Medical Journal*, vol. XVIII, 1940, p. 62).

GARDINER, W. J. "The use of physical therapy in the treatment of fractures" (*University of Toronto Medical Journal*, vol. XVIII, 1941, p. 217).

WILKINS, A. R. "Nupercaine spinal anaesthesia in abdominal surgery" (*Canadian Medical Association Journal*, vol. XLIV, 1941, p. 342).

Faculty of Applied Science and Engineering

DEPARTMENT OF CIVIL ENGINEERING

LEGGET, ROBERT F. "Cofferdam design and construction" (*Canadian Engineer*, vol. LXXIX, 1941, pp. 76-80).

——————— "Conservation and the Sirois Report" (*Canadian Forum*, vol. XX, 1940, pp. 235-7).

——————— "Machines for the mines" (*Beaver*, March, 1941, pp. 20-2).

——————— "Report of the annual meeting of the Highway Research Board" (*Canadian Engineer*, vol. LXXIX, 1941, p. 30).

——————— "Road officials show interest in soil engineering" (*Canadian Engineer*, vol. LXXVIII, 1940, p. 37).

——————— "The St. Lawrence Seaway" (*Canadian Forum*, vol. XXI, 1941, pp. 44-6).

DEPARTMENT OF ELECTRICAL ENGINEERING

REID, J. E. "New electro-magnetic method of testing in place the alignment of steel and aluminum sleeves on steel-reinforced aluminum line conductors" (*The Bulletin*, Hydro Electric Power Commission of Ontario, Jan., 1941; *Electrical World*, Feb. 22, 1941; *Electrical Digest*, March, 1941).

DEPARTMENT OF MECHANICAL ENGINEERING

ALLCUT, E. A. "Comfort and work" (*Heating, Cooling and Piping*, April, 1941).

DEPARTMENT OF METALLURGICAL ENGINEERING

MONTGOMERY, R. J. "Manufacture of optical glass" (*Canadian Chemistry and Process Industries*, vol. XXIV, no. 12, 1940, p. 638).

——————— and SEMPLE, W. A. "Spalling resistance of fused silica vs. quartz and calcined fire clay grog" (*Journal of the Canadian Ceramic Society*, vol. IX, 1940, p. 40).

——————— and TAYLOR, CLIFFORD "Glass for artificial eyes" (*Journal of the Canadian Ceramic Society*, vol. IX, 1940, p. 46).

ONTARIO COLLEGE OF EDUCATION

BELL, L. R. *Living songs*. Edited by Glenn Gildersleeve, Julia Smith and Leslie R. Bell. (Toronto, Gordon V. Thompson Music Co., 1940). Pp. 96.

——————— Published separately in *Choral arrangements for treble voices*. I. *There'll always be an England*. II. *Ezekiel saw de wheel*. III. *River song*. IV. *Hushabye* (Mozart). (Toronto, Gordon V. Thompson Music Co.). Pp. 4.

FERGUSON, G. A. "The application of Sheppard's correction for grouping" (*Psychometrika*, vol. VI, no. 1, 1941, pp. 21-7).

——————— "A bi-factor analysis of reliability coefficients" (*British Journal of Psychology* (General Section), vol. XXXI, part 2, 1940, pp. 172-82).

JACKSON, R. W. B. "Some pitfalls in the statistical analysis of data expressed in the form of IQ scores" (*Journal of Educational Psychology*, Dec., 1940, pp. 677-85).

LOUGHEED, W. J. and WORKMAN, J. G. *A modern geometry for high schools* (Toronto, Macmillan, 1941). Pp. viii, 269.

LIBRARY SCHOOL

SANDERSON, CHARLES R. "The world today in books" (*Toronto Board of Trade Journal*, vol. XXX, 1940, pp. 26-7).

SMITH, LILLIAN H. "A Canadian tribute to Leslie Brooke" (*Horn Book Magazine*, vol. XVII, May-June, 1941, pp. 197-203).

TROTTER, FRANCES W. "Story-telling in Canada" (*Ontario Library Review*, vol. XXIV, Aug., 1940, pp. 302-6).

FACULTY OF MUSIC

MACMILLAN, SIR ERNEST "The arts in war time" (*Educational Record of the Province of Quebec*, March, 1941).

———————— "Calixa Lavallée" (in *Canadian Portraits*, edited by R. G. Riddell, Toronto, Oxford, 1940).

———————— "The future of music in America" (*Musical Facts*, Chicago, Feb., 1941; *Volume of Proceedings*, Music Teachers' National Association, Pittsburg, Feb., 1941).

———————— "Hitler and Wagnerianism" (*Queen's Quarterly*, summer issue, 1941).

WILLAN, HEALY *Christ hath a garden walled around* (Chorus and organ) (Oakville, Ont., Frederick Harris Co., 1941).

———————— *Sing Alleluya forth in duteous praise* (Chorus and organ) (Oakville, Ont., Frederick Harris Co., 1941).

———————— *The trumpet-call* (Chorus and orchestra) (Toronto, Oxford, 1941).

FACULTY OF DENTISTRY

BOX, H. K. "Case management of simplex and complex periodontitis" (*Dental Items of Interest*, Oct., 1940).

———————— "Interpretation, prophylaxis and therapy of certain acquired defects of the hard dental structures" (*Journal of the Canadian Dental Association*, May, 1941).

———————— "The maintenance of enamel integrity during orthodontic treatment" (*Journal of the Canadian Dental Association*, Dec., 1940).

———————— "A periodontal aspect of caries immunity" (*Journal of the Canadian Dental Association*, Oct., 1940).

———————— *Twelve periodontal studies* (Toronto, The University of Toronto Press, 1940). Pp. 251.

ELLIS, R. G. "Fractured anterior teeth—natural crown restoration" (*Journal of the Canadian Dental Association*, July, 1940).

MASON, ARNOLD D. *The dental story of the Dionne quintuplets* (Ontario Dental Association; 24 pp., illustrated).

RISDON, FULTON "Fractures of the jaw" (*Journal of the Canadian Dental Association*, Oct., 1940).

SPINKS, G. W. "A filing system for interesting dental articles" (*Journal of the Canadian Dental Association*, Nov., 1940).

DEPARTMENT OF SOCIAL SCIENCE

FINLAYSON, B. M. Review of articles on teaching social case work (*Canadian Welfare*, Jan.-Feb., 1941).

MCGREGOR, A. C. "Professor Urwick, an appreciation" (*Council Comments*, Oct., 1940).

SCHOOL OF HYGIENE AND CONNAUGHT LABORATORIES

BENJAMIN, B., FLEMING, G., and ROSS, M. A. "Results of Schick test in children one to ten years after injections of toxoid" (*American Journal of Diseases of Children*, vol. LX, 1940, pp. 1304-12).

BEST, C. H. and MCHENRY, E. W. "A note on histaminase" (*Canadian Medical Association Journal*, vol. XLIII, 1940, pp. 163-4; *Journal of the American Medical Association*, vol. CXV, 1940, pp. 235-6).

Best, C. H. and Solandt, D. Y. "Studies in experimental shock" (*Canadian Medical Association Journal*, vol. XLIII, 1940, pp. 206-9).

———————— "Studies on the etiology of traumatic shock" (*American Journal of Physiology*, vol. CXXXIII, 1941, p. 213).

———————— "Use of plasma or serum as a substitute for whole blood" (*British Medical Journal*, vol. I, 1940, pp. 116-17).

Craigie, J. "Isolation of poliomyelitis virus from two cases: laboratory findings" (*Canadian Public Health Journal*, vol. XXXII, 1941, p. 83).

———— "Typing of typhoid bacilli with type II vi phage" (in *Cyclopedia of Medicine, Surgery and Specialties*, edited by G. M. Piersol; Philadelphia, Davis, 1941). Pp. 5-12.

Defries, R. D. "John Gerald FitzGerald" (*Canadian Medical Association Journal*, vol. XLIII, 1940, pp. 190-2; *Canadian Public Health Journal*, vol. XXXI, 1940, pp. 390-3).

Dolman, C. E. "The present status of milk-borne disease hazards" (*Canadian Public Health Journal*, vol. XXXII, 1941, pp. 183-93).

———— Kerr, D. E., and Helmer, D. E. "A new phage and a susceptible w form of S. typhi isolated from a typhoid fever case" (*Canadian Public Health Journal*, vol. XXXII, 1941, pp. 113-19).

Farrell, L. N. "Appraisal of therapeutic agents in experimental staphylococcal infection" (*British Journal of Experimental Pathology*, vol. XXI, 1940, pp. 302-10).

———— "The potency of staphylococcal toxoid" (*Journal of Immunology*, vol. XLI, 1941, pp. 119-26).

Gavin, G. and McHenry, E. W. "Inositol: a lipotropic factor" (*Journal of Biological Chemistry*, vol. CXXXIX, 1941, p. 485).

Haist, R. E. "Diabetes" (*University of Toronto Medical Journal*, vol. XVIII, 1941, pp. 260-4).

———— "The pituitary and the insulin content of pancreas" (*Journal of Physiology*, vol. XCVIII, 1940, pp. 419-23).

———— and Bell, H. J. "The adrenals and the insulin content of the pancreas" (*American Journal of Physiology*, vol. CXXXIII, 1941, p. 310).

———— and Best, C. H. "Effect of insulin administration on the insulin content of pancreas" (*Canadian Medical Association Journal*, vol. XLIV, 1941, p. 81).

Hare, R. "Active immunity to influenza in the mouse" (*Journal of Immunology*, vol. XL, 1941, pp. 267-79). *See also* under Department of Hygiene and Preventive Medicine.

———— and Riehm, W. "Long term variations in titer of neutralizing antibody" (*Journal of Immunology*, vol. XL, 1941, pp. 253-66).

———— and Willits, R. "Source and prevention of septic infection of wounds" (*Canadian Medical Association Journal*, vol. XLIV, 1941, pp. 230-7).

Heard, R. D. H. "A comparison of the infantile and adult rat methods for the assay of the oestrus-inducing gonadotropic substance" (*Journal of Pharmacology and Experimental Therapeutics*, vol. LXXI, 1941, pp. 30-7).

Helmer, D. E., Kerr, D. E., Dolman, C. E., and Ranta, L. E. "Two phage-susceptible types of B. typhosus isolated from a typhoid fever case" (*Canadian Public Health Journal*, vol. XXXI, 1940, pp. 433-40).

Iyengar, N. K. and Scott, D. A. "Destruction of insulin in blood" (*Transactions of the Royal Society of Canada*, vol. XXXIV, section 5, 1940, pp. 45-52).

Jaques, L. B. "The heparins of various mammalian species and their relative anticoagulant potency" (*Science*, vol. XCII, 1940, pp. 488-9).

———— and Charles, A. F. "The assay of heparin" (*Quarterly Journal of Pharmacy and Pharmacology*, vol. XIV, 1941, pp. 1-15).

Longenecker, H. E., Gavin, G., and McHenry, E. W. "Fatty acids synthesized by the action of thiamine" (*Journal of Biological Chemistry*, vol. CXXXIV, 1940, pp. 693-9).

———————— "The relation of the vitamin B complex and liver and pancreas extracts to fat metabolism" (*Journal of Biological Chemistry*, vol. CXXXIX, 1941, pp. 611-20).

McHenry, E. W. "Better food for Canada's workers" (*Canadian Baker and Confectioner*, vol. LIII, 1941, p. 7).

———— "Canada's nutritional problems" (*Canadian Hospital*, vol. XVIII, 1941, pp. 14-15).

McHenry, E. W. "Determination of nutritional status" (*Canadian Public Health Journal*, vol. XXXII, 1941, pp. 231-5).

——————— "Milk, the protected, protective food" (*Canadian Public Health Journal*, vol. XXXII, 1941, pp. 143-6).

——————— "Observations on the nutritive value of bread" (*Canadian Public Health Journal*, vol. XXXI, 1940, pp. 428-32).

——————— "Some observations on Canadian nutrition" (*Canadian Public Health Journal*, vol. XXXI, 1940, pp. 584-8).

——————— and Gavin, G. "The B vitamins and fat metabolism. IV. The synthesis of fat from protein" (*Journal of Biological Chemistry*, vol. CXXXVIII, 1941, pp. 471-5).

——————————————— "The effects of liver and pancreas extracts upon fat synthesis and metabolism" (*Journal of Biological Chemistry*, vol. CXXXIV, 1940, pp. 683-92).

Magladery, J. W., Solandt, D. Y., and Best, C. H. "Serum and plasma in treatment of haemorrhage in experimental animals" (*British Medical Journal*, vol. II, 1940, pp. 248-50).

Moloney, P. J. and Orr, M. D. "The effect of certain constituents of ox bile on the Ramon flocculating value of diphtheria toxin" (*Transactions of the Royal Society of Canada*, vol. XXXIV, section 5, 1940, pp. 87-91).

Patterson, J. and McHenry, E. W. "A dietary investigation in Toronto families having annual incomes between $1,500-$2,400" (*Canadian Public Health Journal*, vol. XXXII, 1941, pp. 251-8).

Ranta, L. E. and Dolman, C. E. "Preliminary observations on the survival of S. typhi in Canadian cheddar-type cheese" (*Canadian Public Health Journal*, vol. XXXII, 1941, pp. 73-4).

Romans, R. G., Scott, D. A., and Fisher, A. M. "Preparation of crystalline insulin" (*Industrial and Engineering Chemistry*, vol. XXXII, 1940, pp. 908-10).

Scott, D. A. and Fisher, A. M. "Bison zinc-insulin crystals and human zinc-insulin crystals" (*Transactions of the Royal Society of Canada*, vol. XXXIV, section 5, 1940, pp. 137-40).

——————— and Mendive, J. "Observations on carbonic anhydrase" (*Journal of Biological Chemistry*, vol. CXXXIX, 1941, pp. 661-74).

Siebenmann, C. and Schnitzer, R. J. "Chemotherapeutic studies of simple nitro compounds" (*Canadian Public Health Journal*, vol. XXXII, 1941, pp. 74-5).

Silverthorne, N. "The development of antibodies in the blood of rabbits by injection of freshly isolated strains of H. influenzae type B and phase I H. pertussis. Preliminary report" (*Canadian Public Health Journal*, vol. XXXI, 1940, pp. 560-1).

——————— "Studies on H. pertussis" (*Canadian Public Health Journal*, vol. XXXII, 1941, p. 85).

——————— "Typing of meningococci" (*Canadian Public Health Journal*, vol. XXXII, 1941, pp. 121-2). *See also* under Department of Paediatrics.

Solandt, D. Y., Magladery, J. W., and Best, C. H. "Studies on the etiology of traumatic shock" (*Canadian Medical Association Journal*, vol. XLIV, 1941, p. 80).

Wilson, R. J. "Laboratory procedures in staphylococcal food poisoning" (*Canadian Public Health Journal*, vol. XXXI, 1940, pp. 607-12). *See also* under Department of Hygiene and Preventive Medicine.

THE LIBRARY

Wallace, W. S. "Forsyth, Richardson and Company in the fur-trade" (*Transactions of the Royal Society of Canada*, vol. XXXIV, section 2, 1941, pp. 187-94).

——————— "The journalist in Canadian politics: a retrospect" (*Canadian Historical Review*, vol. XXII, 1941, pp. 14-24).

——————— "The million dollar counterfeit case" (*Queen's Quarterly*, autumn issue, 1940).

ROYAL ONTARIO MUSEUM OF ARCHAEOLOGY

Todd, William "A vacuum process for the preservation of bone and similar materials" (*Technical Studies in the Field of Fine Arts*, William Hayes Fogg Art Museum, Harvard University, vol. IX, no. 3, 1941).

ROYAL ONTARIO MUSEUM OF ZOOLOGY

BAILLIE, J. L. "The journals of J. H. Fleming, 1888-1940" (*Brodie Club Fleming Memorial Papers;* Toronto, The University of Toronto Press, 1940, mimeographed).

——— "The value of birds to man" (*Ontario Society for the Prevention of Cruelty to Animals,* Jan., 1940).

CROSS, E. C. "Colour phases of the red fox (*Vulpes fulva*) in Ontario" (*Journal of Mammology,* vol. XXII, 1941, pp. 25-39).

——— "Periodic fluctuations in number of the red fox in Ontario" (*Journal of Mammology,* vol. XXI, 1940, pp. 294-306).

DOWNING, S. C. "First Ontario record of the subgenus *Mictomys*" (*Canadian Field-Naturalist,* vol. LIV, 1940, pp. 109-10).

McDOUGALL, E. G. "The Fleming library" (*Brodie Club Fleming Memorial Papers;* Toronto, The University of Toronto Press, 1940, mimeographed).

OUGHTON, J. G. "Land molluscs collected at Hebron, Labrador and Lake Harbour, South Baffin Land" (*Nautilus,* vol. LIII, 1940, p. 4).

——— "A visit to the Arctic of Eastern Canada" (*Nautilus,* vol. LIV, 1940, p. 1).

PRINCE, L. A. "Notes on the habits of the pigmy shrew (*Microsorex hoyi*) in captivity" (*Canadian Field-Naturalist,* vol. LIV, 1940, pp. 97-100).

SHORTT, T. M. "The Fleming collection" (*Brodie Club Fleming Memorial Papers;* Toronto, The University of Toronto Press, 1940, mimeographed).

——— "Some additions to the bird-list from Lake St. Martin, Manitoba" (*Canadian Field-Naturalist,* vol. LV, 1941, pp. 12-13).

SNYDER, L. L. "Golden eagle reported nesting in Ontario" (*Auk,* vol. LVII, 1940, pp. 565-6).

——— "In memoriam: James Henry Fleming" (*Auk,* vol. LVIII, 1941, pp. 1-12).

——— "James Henry Fleming, 1872-1940" (*Brodie Club Fleming Memorial Papers;* Toronto, The University of Toronto Press, 1940, mimeographed).

——— "Laughing gull breeding in Nova Scotia" (*Auk,* vol. LVII, 1940, pp. 568-9).

URQUHART, F. A. "Further notes on the sand cricket, *Tridactylis apicalis* Say" (*Canadian Field-Naturalist,* vol. LIV, 1940, p. 106).

——— "Notes on the Ontario species of Scudderia (Orthoptera, Ensifer)" (*Canadian Field-Naturalist,* vol. LIV, 1940, pp. 102-4).

——— "A proposed method for marking migrant butterflies" (*Canadian Entomologist,* vol. LXXIII, 1941, pp. 21-2).

——— and CORFE, C. E. "The European praying mantis (*Mantis religiosa,* L.) in Ontario" (*Canadian Field-Naturalist,* vol. LIV, 1941, pp. 130-2).

INSTITUTE OF CHILD STUDY

BLATZ, W. E. "Security" (*The School,* Feb., 1941).

MILLICHAMP, D. A. "From the nursery school" (*Parent Education Bulletin,* no. 13, April, 1941).

——— "A longitudinal study of development" (*The School,* Jan., 1941).

REPORT OF THE REGISTRAR

I beg to submit the following statistics for the year ending June 30, 1941:

I. Distribution of the staff of the University and University College (furnished by the Bursar).

II. Distribution of the staffs of the federated Arts Colleges (furnished by the Registrars of the colleges).

III. Registration of students by faculties and years.

IV. Enrolment in the Arts Colleges (furnished by the Registrars of the colleges).

V. Enrolment in the University departments in Arts (furnished by the departments).

VI. Registration in courses in the Faculty of Arts.

VII. Registration in courses in the School of Graduate Studies (furnished by the Secretary of the School).

VIII. Results of the annual examinations (furnished by the Secretaries of the faculties).

IX. Admission to degrees.

X. Admission to diplomas and certificates.

XI. Geographical distribution of students (furnished by the Secretaries of the faculties).

A. B. Fennell

1940-1941

I. DISTRIBUTION OF THE STAFF OF THE UNIVERSITY AND UNIVERSITY COLLEGE

	Professors	Associate Professors	Assistant Professors	Associates	Lecturers	Directors	Instructors	Other Sessional Appointments	
University (Faculty of Arts)	54	35	36	1	36	..	9	119	290
University College	17*	6	11	..	7	..	..	1	4
Faculty of Medicine	24†	10	34‡	27	16†‡	..	..	259	[illegible]
Faculty of Applied Science	18	11	12	..	26	..	14	31	11
Faculty of Dentistry	9	11	1	24	2	..	4	3	5
Faculty of Household Science	2	..	3	..	5	..	..	7	1
Faculty of Forestry	2	2	1	..	2	..	..	..	
Faculty of Music	2	..	..	..	..	..	..	..	
Social Science	..	1	1	..	13†	1	2	..	1
Ontario College of Education	5	5	6	..	20†	..	28	..	6
School of Nursing	..	..	..	..	35§	1	..	..	3
									1012

*1 also in University
†1 also in Arts
‡1 also in Dentistry
§2 also in Arts; 12 also in Medicine; 1 also in Dentistry; 1 also in O.C.E.

The following on leave of absence for the duration of the war are included in the above schedule:

University (Faculty of Arts)	7
Faculty of Medicine	50
Faculty of Applied Science and Engineering	5
Faculty of Dentistry	3
	65

II. DISTRIBUTION OF THE STAFFS OF THE FEDERATED ARTS COLLEGES

	Victoria College	Trinity College	St. Michael's College	
Professors	9	10	15	
Associate professors	8*	4	3	
Assistant professors	3	..	..	
Lecturers	13	6	11	
Instructors	1	..	..	
Fellows	..	..	..	
Readers	1	2	..	
	33	22	29	84

*Includes two on leave of absence for the duration of the war.

III. REGISTRATION OF STUDENTS BY FACULTIES AND YEARS

The number of students registered in the University, in colleges and faculties, in the session 1940-1 was 6,825, distributed as follows:

				Men	Women	Total
Faculty of Arts				1,932	1,532	3,464
University of Toronto	549	291	840			
University College	495	546	1,041			
Victoria College	442	401	843			
Trinity College	191	186	377			
St. Michael's College	255	108	363			
Faculty of Medicine				734	67	801
Faculty of Applied Science and Engineering				975	10	985
Faculty of Household Science				...	47	47
Ontario College of Education				400	298	698
Faculty of Forestry				43	...	43
Faculty of Music				33	21	54
School of Graduate Studies				385	105	490
Faculty of Dentistry				228	21	249
Physical and Health Education				6	10	16
Registered twice				19	3	22
				4,717	2,108	6,825

In departments there were registered 900, distributed as follows:

	Men	Women	Total
Department of Social Science	15	78	93
School of Nursing	...	569	569
Physical Education for Women	...	22	22
University Extension (Occupational Therapy)	...	98	98
University Extension (Physiotherapy)	...	76	76
University Extension (Aerial Navigation)	42	...	42
	57	843	900

The grand total of registration for the whole University was 7,725, of whom 4,774 were men and 2,951 were women.

In addition there were 4,668 persons registered in the Department of University Extension in courses and at provincial centres which are referred to in detail in the Report of the Director of University Extension and Publicity (pp. 46-50).

The figures may be further analysed as follows:

Faculty of Arts

University of Toronto

	Men	Women	Total
Teachers' Classes and Summer Session	315	255	570
Occasional Arts students	234	36	270
	549	291	840

University College

	Men	Women	Total
First-year undergraduates	120	176	296
Second-year undergraduates	145	138	283
Third-year undergraduates	115	147	262
Fourth-year undergraduates	107	72	179
Occasional students	7	13	20
Exchange student	1	...	1
	495	546	1,041

Victoria College

	Men	Women	Total
First-year undergraduates	131	130	261
Second-year undergraduates	141	109	250
Third-year undergraduates	103	108	211
Fourth-year undergraduates	61	51	112
Occasional students	6	1	7
Exchange students	...	2	2
	442	401	843

Trinity College

	Men	Women	Total
First-year undergraduates	64	60	124
Second-year undergraduates	65	48	113
Third-year undergraduates	42	54	96
Fourth-year undergraduates	18	18	36
Occasional students	2	6	8
	191	186	377

St. Michael's College

	Men	Women	Total
First-year undergraduates	110	46	156
Second-year undergraduates	72	30	102
Third-year undergraduates	55	23	78
Fourth-year undergraduates	16	6	22
Occasional students	2	3	5
	255	108	363

Pass Course for Teachers

	Men	Women	Total	Grand Total
B.A. Course				
Summer Session:				
Regular students	136	92	228	...
Occasional students	9	7	16	244
Teachers' Classes:				
Toronto:				
Regular students	223	172	395	...
Occasional students	8	9	17	412
Registered twice	61	25	86	86
	315	255	570	570

Faculty of Medicine

	Men	Women	Total
First-year undergraduates	122	17	139
Second-year undergraduates	124	6	130
Third-year undergraduates	108	9	117
Fourth-year undergraduates	99	11	110
Fifth-year undergraduates	109	7	116
Sixth-year undergraduates	126	9	135
Candidate for Degree of B.Sc. (Med.)	1	...	1
Candidates for Diploma in Psychiatry	6	1	7
Candidates for Diploma in Public Health	24	3	27
Candidates for Diploma in Radiology	3	...	3
Graduate students	4	4	8
Occasional students	8	...	8
	734	67	801

Faculty of Applied Science and Engineering

	Men	Women	Total
First-year undergraduates	334	4	338
Second-year undergraduates	262	4	266
Third-year undergraduates	191	2	193
Fourth-year undergraduates	186	...	186
Fifth-year undergraduates	2	...	2
	975	10	985

Faculty of Household Science

	Men	Women	Total
First-year undergraduates	...	6	6
Second-year undergraduates	...	7	7
Third-year undergraduates	...	28	28
Fourth-year undergraduates	...	5	5
Occasional student	...	1	1
	...	47	47

Ontario College of Education

	Men	Women	Total
Teachers' Course:			
Students in attendance	98	158	256
Extra-mural students	98	63	161
Librarians' Course:			
Students in attendance	5	32	37
Extra-mural students	...	6	6
Bachelor of Pedagogy Course	203	39	242
Registered twice	4	...	4
	400	298	698

Faculty of Forestry

	Men	Women	Total
First-year undergraduates	15	...	15
Second-year undergraduates	13	...	13
Third-year undergraduates	11	...	11
Fourth-year undergraduates	3	...	3
Occasional student	1	...	1
	43	...	43

Faculty of Music

	Men	Women	Total
First-year undergraduates	13	4	17
Second-year undergraduates	6	8	14
Third-year undergraduates	14	9	23
	33	21	54

School of Graduate Studies

	Men	Women	Total
Candidates for Degree of Ph.D.	112	32	144
Candidates for Degree of M.A.	105	37	142
Candidate for Degree of M.Com.	1	...	1
Candidates for Degree of M.S.	3	...	3
Candidates for Degree of M.A.Sc.	14	...	14
Candidates for Degree of C.E.	2	...	2
Candidate for Degree of M.E.	1	...	1
Candidates for Degree of D.Paed.	32	...	32
Candidate for Degree of M.Sc.F.	1	...	1
Candidates for Degree of M.Sc. (Dent.)	2	...	2
Candidates for Degree of Mus.Doc.	1	1	2
Candidates for Degree of M.S.A.	22	...	22
Candidates for Degree of D.V.Sc.	2	...	2
Candidate for Degree of M.V.Sc.	1	...	1
Graduate students	86	35	121
	385	105	490

Faculty of Dentistry

	Men	Women	Total
First-year undergraduates	32	...	32
Second-year undergraduates	54	2	56
Third-year undergraduates	53	...	53
Fourth-year undergraduates	38	1	39
Fifth-year undergraduates	45	...	45
Candidates for Degree of B.Sc. (Dent.)	4	...	4
Candidates for Diploma in Dental Nursing	...	17	17
Occasional students	2	1	3
	228	21	249

Course in Physical and Health Education

	Men	Women	Total
First-year undergraduates	6	10	16

Department of Social Science

	Men	Women	Total
First-year full-time students	11	28	39
Second-year full-time students	3	26	29
Part-time students	1	24	25
	15	78	93

School of Nursing

	Men	Women	Total
Full-time students	...	131	131
Part-time students	...	438	438
	...	569	569

IV. ENROLMENT IN THE ARTS COLLEGES

University College

	English	Ethics	French	German	German (Sc.)	Greek	Greek and Roman History	Latin	Oriental History	Oriental Languages	Oriental Literature
First Year											
Pass	126	10	166	19	46	..	19	1	14	15	82
Honour	44	..	35	12	..	17	4	10	3	3	..
Second Year											
Pass	112	12	105	8	28	4	3	4	7	7	73
Honour	41	15	29	14	..	17	3	9	1	1	..
Third Year											
Pass	112	57	65	12	..	2	7	3	4	4	70
General	11	..	5	..	..	..	..	..	..	..	..
Honour	13	11	17	8	..	2	11	1	2	2	..
Fourth Year											
Pass	..	18	..	..	..	..	6	..	..	..	79
General	3	..	3	..	..	..	..	..	..	1	..
Honour	29	8	25	16	..	9	14	1	5	3	..
TOTALS											
Pass	350	97	336	39	74	6	35	8	25	26	304
General	14	..	8	..	..	..	..	..	..	1	..
Honour	127	34	106	50	..	45	32	21	11	9	..
Teachers' Classes	124	22	19	5	..	..	..	2	..	..	..
Graduate Studies	39	..	10	3	..	9	2	23	2	6	..
Other Faculties	43	..	99	240	..	..	..	..	..	..	..
GRAND TOTAL	697	153	578	337	74	60	69	54	38	42	304

Victoria College

	English	Ethics	French	German	German (Sc.)	Greek	Greek and Roman History	Latin	Oriental History	Oriental Languages	Religious Knowledge
First Year											
Pass	88	23	119	9	47	15	22	4	4	4	79
Honour	61	..	36	14	..	1	18	9	5	..	..
Second Year											
Pass	79	13	83	13	16	3	12	1	4	1	89
Honour	36	12	40	14	..	2	3	9	..	..	..
Third Year											
Pass	64	20	40	2	..	6	31	2	7	3	48
General	6	3	3	1	..	1	2	2	..	..	..
Honour	18	12	19	12	..	1	14	4	..	..	..
Fourth Year											
Pass	..	9	..	..	..	..	25	..	..	..	21
General	10	2	5	3	..	..	6	..	..	..	..
Honour	19	9	12	9	..	4	11	6	1	1	..
Totals											
Pass	231	65	242	24	63	24	90	7	15	8	237
General	16	5	8	4	..	1	8	2	..	..	..
Honour	134	33	107	49	..	8	46	28	6	1	..
Teachers' Classes	..	..	3	..	..	..	..	..	..	..	..
Graduate Studies	8	..	1	1	..	..	..	1	..	4	..
Grand Total	389	103	361	78	63	33	144	38	21	13	237

Trinity College

	English	Ethics	French	German	German (Sc.)	Greek	Greek and Roman History	Latin	Oriental History	Oriental Languages	Religious Knowledge
First Year											
Pass	45	11	65	5	13	1	6	1	..	9	85
Honour	24	..	13	9	..	1	6	3	..	..	..
Second Year											
Pass	46	17	47	2	3	2	1	2	..	3	69
Honour	9	..	7	2	..	3	3	4	..	..	..
Third Year											
Pass	41	8	26	8	..	..	..	3	..	..	74
General	3	..	1	1	..	..	..	..	..	..	..
Honour	11	4	9	2	..	..	..	..	..	..	..
Fourth Year											
Pass	..	..	..	..	..	..	..	..	..	..	23
General	1	2	2	1	..	..	..	..	..	..	..
Honour	2	2	3	1	..	1	2	2	..	..	..
Totals											
Pass	132	36	138	15	16	3	7	6	..	12	251
General	4	2	3	2	..	..	..	..	..	..	..
Honour	46	6	32	14	..	5	11	9	..	..	..
Grand Total	182	44	173	31	16	8	18	15	..	12	251

St. Michael's College

	English	Ethics	French	German	German (Sc.)	Greek	Greek and Roman History	Latin	Philosophy	Religious Knowledge
First Year										
Pass	62	67	76	3	6	5	6	51	52	92
Honour	12	..	16	3	..	5	7	9	8	35
Second Year										
Pass	47	58	50	6	4	1	..	29	40	57
Honour	3	3	2	..	..	1	..	2	3	18
Third Year										
Pass	40	26	30	2	3	3	..	20	27	37
Honour	5	3	7	..	..	..	..	6	3	18
Fourth Year										
Pass	..	..	..	..	..	..	..	..	..	14
Honour	7	3	5	2	..	2	..	2	7	..
TOTALS										
Pass	149	151	156	11	13	9	6	100	119	200
Honour	27	9	30	5	..	8	7	19	21	71
GRAND TOTAL	176	160	186	16	13	17	13	119	140	271

V. ENROLMENT IN THE UNIVERSITY DEPARTMENTS IN ARTS

Department of Anthropology

	Pass	Pass and Honour	Honour
Faculty of Arts			
First Year	117	90	33
Second Year	..	12	13
Third Year	..	6	..
Fourth Year	..	26	5
Faculty of Medicine			
First Year	..	29	..
School of Graduate Studies	..	6	..
Totals	117	169	51

Number of students registered—337

Department of Applied Mathematics

	Pass	Pass and Honour	Honour
Faculty of Arts			
First Year	6	..	..
Second Year	4	..	32
Third Year	4	..	25
Fourth Year	1	..	18
Occasional students	..	..	6
Faculty of Applied Science and Engineering			
Third Year	..	12	..
Fourth Year	..	12	..
School of Graduate Studies	..	..	22
Totals	15	24	103

Number of students registered—142

Department of Archaeology

	Pass	Honour
Faculty of Arts		
First Year	..	14
Second Year	84	17
Third Year	..	3
Fourth Year	..	11
School of Graduate Studies	..	8
Totals	84	53

Number of students registered—137

Department of Astronomy

	Pass	Pass and Honour	Honour	Laboratory
Faculty of Arts				
First Year	22	..	..	..
Second Year	..	7	..	..
Third Year	2	..	9	10
Department of University Extension				
Aerial Navigation	26	..	..	..
Totals	50	7	9	10

Number of students registered—66

Department of Biology

	Lecture Courses			Laboratory Courses	
	1 or 2 or 3 hours		4 or 5 or 6 hours		
	Pass	Honour	Honour	Pass	Honour
Faculty of Arts					
First Year	75	120	..	75	120
Second Year	90	77	8	90	85
Third Year	78	23	7	64	21
Fourth Year	..	13	3	..	7
Faculty of Medicine					
First Year	..	140	..	..	140
Faculty of Household Science					
First Year	..	5	..	..	5
Faculty of Forestry					
First Year	..	15	..	..	15
Second Year	..	12	..	..	..
Fourth Year	..	3	..	..	3
School of Graduate Studies	..	..	..	..	47
Faculty of Dentistry					
First Year	..	32	..	..	32
Physical and Health Education	18	..	..	18	..
School of Nursing	13	..	..	13	..
College of Optometry of Canada	..	20	..	..	20
Totals	274	460	18	260	495

Number of students registered—755

Department of Botany

	Lecture Courses 1 or 2 or 3 hours		Laboratory Courses	
	Pass	Honour	Pass	Honour
Faculty of Arts				
First Year	83	116	9	116
Second Year	8	16	8	16
Third Year	2	8	2	8
Fourth Year	..	8	..	8
Teachers' Classes	15	..	15	..
Occasional Students	..	2	..	2
Faculty of Applied Science and Engineering				
First Year	94	..	94	..
Fourth Year	..	2	..	2
Faculty of Household Science				
First Year	..	9	..	9
Faculty of Forestry				
First Year	..	16	..	16
Fourth Year	..	3	..	3
School of Graduate Studies	..	53	..	29
Ontario College of Pharmacy				
First Year	..	78	..	78
Second Year	..	90	..	90
Totals	202	401	128	377

Number of students registered—603

Department of Chemistry

	Pass	Pass and Honour	Honour	Laboratory
Faculty of Arts				
First Year	154	..	173	255
Second Year	81	..	94	137
Third Year	44	..	28	71
Fourth Year	2	..	22	23
Faculty of Medicine				
First Year	..	140	..	140
Second Year	..	122	..	122
Faculty of Applied Science and Engineering				
First Year	..	129	..	129
Second Year	..	88	..	88
Third Year	..	91	..	89
Fourth Year	..	22	..	15
Faculty of Household Science				
First Year	..	5	..	5
Second Year	..	4	..	..
Faculty of Forestry				
First Year	..	16	..	16
Third Year	..	12	..	..
School of Graduate Studies	..	51	..	34
Faculty of Dentistry				
First Year	..	32	..	32
Second Year	..	56	..	..
Third Year	..	53	..	53
Physical and Health Education	15	..	..	15
Ontario College of Pharmacy				
First Year	..	78	..	78
Second Year	..	94	..	94
Department of University Extension				
Evening Classes	33	..	..	..
Totals	329	993	317	1,396

Number of students registered—1,639

Department of Fine Art

	Pass	Pass and Honour	Honour	Laboratory
Faculty of Arts				
First Year	34	..	14	..
Second Year	52	34	10	..
Third Year	31	32	12	..
Fourth Year	..	13	7	..
Occasional Students	3	..	4	1
Totals	120	79	47	1

Number of students registered—247

Department of Food Chemistry
(Faculty of Household Science)

	Pass	Pass and Honour	Honour	Laboratory
Faculty of Arts				
Second Year	39	..	43	39
Third Year	21	..	1	22
Fourth Year	..	5	36	41
Occasional Student	..	..	1	1
Faculty of Household Science				
Second Year	..	7	..	7
Third Year	19	..	5	24
Fourth Year	..	..	5	5
School of Graduate Studies	..	..	3	3
Totals	79	12	94	142

Number of students registered—184

Department of Geography

	Pass	Pass and Honour	Honour	Laboratory
Faculty of Arts				
First Year	78	30	27	135
Second Year	68	2	32	47
Third Year	39	2	..	41
Teachers' Classes	56	..	..	56
Occasional Students	3	..	..	3
Ontario College of Education	240	..	..	..
School of Graduate Studies	..	..	6	..
Totals	484	34	65	282

Number of students registered—569

Department of Geology and Palaeontology

	Lecture Courses					Laboratory Courses	
	1 or 2 or 3 hours		4 or 5 or 6 hours		7 or more hours		
	Pass	Honour	Pass	Honour	Honour	Pass	Honour
Faculty of Arts							
First Year	62	64	..	..	..	..	..
Second Year	20	17	..	..	..	17	17
Third Year	33	..	..	4	3	19	3
Fourth Year	..	..	..	2	3	..	5
Teachers' Classes	37	..	..	..	..	37	..
Occasional Students	3	..	..	..	..	1	..
Faculty of Applied Science and Engineering							
Second Year	76	..	..	..	..	48	..
Third Year	38	..	5	..	..	24	..
Fourth Year	27	..	7	..	..	34	..
Faculty of Forestry							
Second Year	12	..	..	..	..	..	..
Third Year	11	..	..	..	..	11	..
School of Graduate Studies	..	7	..	17	2	..	26
Totals	319	88	12	23	8	191	51

Number of students registered—450

Department of History

	Lecture Courses			
	1 or 2 or 3 hours		4 or 5 or 6 hours	7 or more hours
	Pass	Honour	Honour	Honour
Faculty of Arts				
First Year	85	113	..	..
Second Year	82	..	95	32
Third Year	91	37	..	22
Fourth Year	11	30	..	21
Teachers' Classes	88	..	..	..
Occasional Students	1	6	3	..
Faculty of Medicine				
First Year	34	..	..	..
School of Graduate Studies	..	..	21	13
Totals	392	186	119	88

Number of students registered—785

Department of Household Science
(Faculty of Household Science)

	Pass	Pass and Honour	Honour	Laboratory
Faculty of Arts				
First Year	..	..	65	..
Second Year	26	..	43	69
Third Year	19	11	52	82
Fourth Year	..	5	36	41
Occasional Student	..	..	1	1
Faculty of Household Science				
First Year	..	8	..	..
Second Year	..	7	..	7
Third Year	19	..	9	28
Fourth Year	..	..	5	5
School of Graduate Studies	..	..	4	1
Totals	64	31	215	234

Number of students registered—310

Department of Italian and Spanish

	Italian		Spanish	
	Pass	Honour	Pass	Honour
Faculty of Arts				
First Year	11	6	107	34
Second Year	11	4	58	16
Third Year	3	4	54	11
Fourth Year	..	7	..	13
School of Graduate Studies	..	3	..	3
Totals	25	24	219	77

Methods of Research, Bibliography—4

Number of students registered in Italian 49, and in Spanish 296

Department of Law

	Pass	Honour
Faculty of Arts		
First Year	..	101
Second Year	46	27
Third Year	80	16
Fourth Year	..	30
Faculty of Applied Science and Engineering		
Third Year	52	..
Faculty of Forestry		
Third Year	8	..
School of Graduate Studies	..	13
Department of University Extension		
Business Certificate	30	..
Evening Classes	28	..
Bachelor of Laws and Master of Laws Courses	..	15
Totals	244	202

Number of students registered—446

Department of Mathematics

	Lecture Courses					Laboratory Courses
	1 or 2 or 3 hours		4 or 5 or 6 hours		7 or more hours	
	Pass	Honour	Pass	Honour	Honour	
Faculty of Arts						
First Year	33	..	..	67	50	..
Second Year	25	110	..	..	21	..
Third Year	16	50	2	16	..	..
Fourth Year	..	11	3	..	44	..
Teachers' Classes	8	3	..	..	..	..
Occasional Students	7	..	1	..	..	..
Faculty of Applied Science and Engineering						
First Year	..	..	338	..	..	47
Second Year	261	..	15	..	..	42
Third Year	15	..	..	..	..	..
Faculty of Forestry						
First Year	13	..	..	..	..	..
School of Graduate Studies	..	..	..	15	..	..
College of Optometry of Canada	12	..	..	..	..	..
Totals	390	174	359	98	115	89

Number of students registered—1,136

Department of Military Studies

	Pass	Honour
Faculty of Arts		
First Year	30	127
Second Year	84	48
Third Year	85	52
Fourth Year	56	41
Teachers' Classes	32	..
Faculty of Medicine		
First Year	2	..
Second Year	30	..
Third Year	13	..
Fourth, Fifth and Sixth Years	141	..
Faculty of Applied Science and Engineering		
First Year	14	..
Second Year	79	..
Third Year	52	..
Fourth Year	55	..
Ontario College of Education	8	..
Faculty of Forestry		
First Year	3	..
Second Year	5	..
Third Year	4	..
Faculty of Dentistry		
First Year	1	..
Second Year	2	..
Third Year	5	..
Fourth and Fifth Years	61	..
School of Graduate Studies	1	..
Ontario College of Pharmacy		
First Year	2	..
Second Year	20	..
College of Optometry of Canada	11	..
Totals	796	268

Number of students registered—1,064

Department of Mineralogy and Petrography

	Pass	Pass and Honour	Honour	Laboratory
Faculty of Arts				
First Year	14	..	..	14
Second Year	3	..	20	23
Third Year	..	..	23	14
Fourth Year	..	..	4	4
Teachers' Classes	40	..	..	40
Faculty of Applied Science and Engineering				
First Year	..	139	..	139
Second Year	..	54	..	54
Third Year	..	24	..	24
Fourth Year	..	7	..	7
Faculty of Forestry				
Second Year	..	13	..	13
School of Graduate Studies	..	..	26	26
Totals	57	237	73	358

Number of students registered—367

Department of Music
(Faculty of Music)

	Lecture Courses 4 or 5 or 6 hours Honour
Faculty of Arts	
First Year	6
Second Year	7
Third Year	8
Fourth Year	5
Total	26

Number of students registered—26

Department of Philosophy

	Pass	Honour
Faculty of Arts		
First Year	72	114
Second Year	95	95
Third Year	155	60
Fourth Year	40	56
Teachers' Classes	23	..
Faculty of Medicine		
First Year	12	..
School of Graduate Studies	..	56
Department of Social Science		
First Year	16	..
Totals	413	381

Number of students registered—794

Department of Physics

	Pass	Pass and Honour	Honour	Laboratory
Faculty of Arts				
First Year	127	..	171	226
Second Year	43	..	65	104
Third Year	50	3	36	84
Fourth Year	..	5	38	42
Teachers' Classes	22	..	..	22
Occasional Student	..	..	1	1
Faculty of Medicine				
First Year	..	139	..	139
Diploma in Radiology	..	3	..	3
Faculty of Applied Science and Engineering				
First Year	..	..	30	30
Second Year	..	..	15	15
Third Year	..	..	12	12
Fourth Year	..	..	11	11
Faculty of Household Science				
First Year	..	..	6	6
Candidates for Specialists' Certificates	..	..	3	3
Faculty of Forestry				
First Year	16	..	..	16
School of Graduate Studies	..	..	47	26
Faculty of Dentistry				
First Year	..	32	..	32
Department of University Extension				
Aerial Navigation	..	50	..	50
Physiotherapy	43	..	..	43
Teachers' Refresher Course	13	..	..	13
College of Optometry of Canada	..	46	..	46
Miscellaneous				
Naval Officers' Course (Summer, 1940)	..	..	11	11
Seamen's Course No. 1 (Feb., Mar., Apr.)	..	51	..	51
Naval Officers' Course (Mar., Apr.)	..	..	30	30
Seamen's Course No. 2 (May, June)	..	50	..	50
R.C.A.F. Radio Technicians' Course (June)	..	500	..	500
Totals	314	879	476	1,566

Number of students registered—1,669

Department of Political Economy

	Lecture Courses				
	1 or 2 or 3 hours		4 or 5 or 6 hours		7 or more hours
	Pass	Honour	Pass	Honour	Honour
Faculty of Arts					
First Year	52	73	22	96	..
Second Year	145	24	37	..	106
Third Year	96	51	15	16	69
Fourth Year	37	55	..	5	63
Teachers' Classes	36	..	..	..	..
Occasional Students	..	..	..	2	2
Faculty of Household Science					
Second Year	5	..	..	..	..
Third Year	19	..	..	..	..
Faculty of Forestry					
Third Year	12	..	..	..	..
School of Graduate Studies	..	10	..	3	17
Department of Social Science					
First Year	..	25	..	..	..
Second Year	..	33	..	..	..
College of Optometry of Canada	16	..	..	..	..
Department of University Extension					
Evening Classes	39	..	..	..	..
Certificate Course in Business	67	..	..	..	..
Workers' Educational Association	143	..	..	..	..
Totals	667	271	74	122	257

Number of students registered—1,391

Department of Psychology

	Lecture Courses				Laboratory Courses	
	1 or 2 or 3 hours		4 or 5 or 6 hours	7 or more hours		
	Pass	Honour	Honour	Honour	Pass	Honour
Faculty of Arts						
First Year	115	49	..	..	..	..
Second Year	174	32	..	8	174	18
Third Year	141	24	..	6	..	6
Fourth Year	..	64	..	9	..	15
Teachers' Classes	140	..	..	..	59	..
Occasional Students	1	..	..	..	1	..
Faculty of Medicine						
Second Year	124	..	..	..	..	..
Third Year	3	..	..	..	3	..
Fourth Year	12	..	..	..	..	..
Faculty of Household Science						
First, Second, and Third Years	24	..	..	..	..	..
Fourth Year	..	1	..	..	..	..
School of Graduate Studies	..	..	11	14	..	14
Physical and Health Education	18	..	..	..	..	..
Department of Social Science						
First Year	14	..	..	..	..	..
Second Year	2	..	..	..	..	..
School of Nursing	36	..	..	..	..	..
Department of University Extension						
Occupational Therapy	61	..	..	..	..	..
Physiotherapy	42	..	..	..	..	..
Centralized Pupil Nurses	200	..	..	..	..	..
Evening Classes	140	..	..	..	..	..
College of Optometry of Canada	41	..	..	..	23	..
Totals	1,288	170	11	37	260	53

Number of students registered—1,506

VI. REGISTRATION IN COURSES IN THE FACULTY OF ARTS

Courses	First Year				Second Year				Third Year				Fourth Year				
	UC	VC	TC	MC	UC	VC	TC	MC	UC	VC	TC	MC	UC	VC	TC	MC	Totals
Pass	108	83	41	113	119	89	60	81	108	81	40	54	...	...	...	...	977
General	...	...	...	...	...	...	...	...	19	12	6	1	10	15	6	3	72
Classics	4	2	1	4	3	1	3	...	1	1	...	1	...	4	...	1	26
English Language and Literature	15	18	6	6	17	22	4	1	10	8	5	3	16	12	1	2	146
Greek and Hebrew	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Latin (French or Greek Option), Div. I	...	2	...	2	...	2	1	1	...	3	...	2	1	2	1	1	20
Latin (French or Greek Option), Div. II					...	...	...	...	...	...	...	...	...	...	1	1	
Latin and English	...	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	4
Modern Languages	16	14	8	9	14	11	2	1	10	11	4	2	17	7	2	1	129
Oriental Languages	3	...	...	...	...	...	...	...	2	...	...	...	3	1	...	...	9
Fine Art	5	6	2	1	6	2	1	1	2	2	2	...	5	...	...	1	36
Law	10	6	3	...	10	7	5	...	5	4	1	...	21	3	...	...	75
Social and Philosophical Studies	43	30	20	2	...	...	...	...	...	...	...	...	...	...	...	...	95
Modern History	...	...	...	...	9	17	5	1	7	10	5	...	13	5	3	...	75
Music	3	3	...	1	2	4	...	1	3	3	2	...	...	4	...	1	27
Philosophy	...	...	...	...	1	...	...	...	2	2	2	3	2	...	1	2	15
Philosophy (English or History Option)	...	6	2	1	4	3	...	2	1	4	2	...	2	4	1	4	36
Political Science and Economics	...	...	...	...	5	11	5	1	4	5	2	...	8	3	1	...	45
Psychology	...	...	...	...	8	...	...	...	3	...	2	...	6	1	2	...	22
Sociology	...	...	...	...	10	8	1	1	5	6	2	...	5	5	1	...	44
Mathematics and Physics, Div. I	19	22	8	1	11	8	...	2	2	6	1	...	2	2	...	...	110
Mathematics and Physics, Div. II													2	1	1	...	
Mathematics and Physics, Div. III									4	3	...	...	10	4	...	1	
Mathematics and Physics, Div. IV													...	...	...	...	
Physics and Chemistry	...	...	...	...	8	2	...	...	4	1	...	...	1	...	...	1	17
Physics and Geology	...	...	...	...	...	1	...	...	1	1	2	...	...	...	...	...	5
Science	18	25	3	3	...	...	...	...	...	...	...	...	...	...	...	...	49
Biological and Medical Sciences	...	...	...	...	5	3	...	...	1	3	1	2	3	3	1	...	22
Biology	...	...	...	...	3	5	...	...	1	3	2	...	3	1	...	...	18
Biology and Physics	...	...	...	...	1	1	...	...	...	...	...	...	1	...	...	...	3
Chemistry	...	...	...	...	6	1	1	3	2	1	3	3	6	1	2	2	31
Chemistry, Mineralogy and Geology, Div. I	...	...	...	...	3	2	...	...	3	...	...	...	3	2	...	...	18
Chemistry, Mineralogy and Geology, Div. II									3	1	...	...	1	...	...	...	
Food Chemistry	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
Geology and Mineralogy	...	...	...	...	...	1	...	1	...	3	...	...	1	1	1	...	8
Household Economics	27	20	15	6	18	18	5	2	29	15	6	2	20	13	3	...	199
Physiology and Biochemistry	...	...	...	...	3	...	...	...	2	1	...	...	...	4	...	...	10
Geography	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	2
Commerce and Finance	25	21	14	7	15	30	20	3	27	21	6	5	17	14	8	1	234
Exchange Students	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	3
Totals	296	261	124	156	284	252	113	102	262	211	96	78	179	112	36	22	2,584

VII. REGISTRATION IN COURSES IN THE SCHOOL OF GRADUATE STUDIES

Department	Ph.D.	M.A.	M. Com.	M.S.	M.A.Sc.	C.E.	M.E.	D.Paed.	M.Sc.F.	M.Sc. (Dent.)	Mus. Doc.	M.S.A.	D.V.Sc.	M.V.Sc.	Grad. Stud.
Anatomy	2	1	..	..	..	..	..	..	..	..	..	..	..	..	1
Anthropology	1	1	..	..	..	..	..	..	..	..	..	..	..	..	1
Applied Mathematics	2	3	..	..	..	..	..	..	..	..	..	..	..	..	1
Biochemistry	5	5	..	..	..	..	..	..	..	..	..	3	..	..	2
Biology	16	6	..	..	..	..	..	..	..	..	..	4	..	..	3
Botany	12	..	..	..	..	..	..	..	..	..	..	2	..	..	1
Chemistry	23	14	..	..	..	..	..	..	..	..	..	5	..	..	3
Chemical Engineering	1	..	..	..	2	..	..	..	..	..	..	..	..	..	2
Chinese Archaeology	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Classics	4	2	..	..	..	..	..	..	..	..	..	..	..	..	5
Dentistry	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..
Educational Theory	1	4	..	..	..	..	..	..	..	..	..	..	..	..	1
Electrical Engineering	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..
English	4	18	..	..	..	..	..	..	..	..	..	..	..	..	16
Fine Art	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Food Chemistry	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Forestry	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
Geography	2	3	..	..	..	..	..	..	..	..	..	..	..	..	1
Geology and Palaeontology	6	7	..	..	..	..	..	..	..	..	..	..	..	..	7
Germanic Languages	..	2	..	..	..	..	..	..	..	..	..	..	..	..	3
History	4	7	..	..	..	..	..	..	..	..	..	..	..	..	9
Household Science	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..
Hygiene and Preventive Medicine	..	2	..	..	..	..	..	..	..	..	..	3	..	..	1
Law	..	1	..	..	..	..	..	..	..	..	..	..	..	..	5
Mathematics	2	2	..	..	..	..	..	..	..	..	..	..	..	..	4
Mechanical Engineering	1	..	..	..	2	..	..	..	..	..	..	..	..	..	..
Metallurgical Engineering	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..
Mineralogy	2	3	..	..	..	..	..	..	..	..	..	..	..	..	..
Mining Engineering	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..
Music	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..
Pathology and Bacteriology	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Pathological Chemistry	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Pedagogy	..	..	..	..	..	..	..	32	..	..	..	..	..	..	..
Pharmacology	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Philosophy	20	18	..	..	..	..	..	..	..	..	..	..	..	..	11
Physics	7	9	..	..	..	..	..	..	..	..	..	..	..	..	5
Physiology	1	4	..	..	..	..	..	..	..	..	..	..	..	..	..
Physiological Hygiene	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Political Science	2	15	1	..	..	..	..	..	..	..	..	1	..	..	13
Preventive Dentistry	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Professional Degrees	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..
Psychology	6	6	..	..	..	..	..	..	..	..	..	..	..	..	7
Romance Languages	6	5	..	..	..	..	..	..	..	..	..	..	..	..	7
Semitic Languages	4	..	..	..	..	..	..	..	..	..	..	..	..	..	4
Surgery	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..
Veterinary Science	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..
Special Committees	3	..	..	..	1	..	..	..	..	..	..	4	..	..	..
Totals	144	142	1	3	14	2	1	32	1	2	2	22	2	1	121

VIII. RESULTS OF THE ANNUAL EXAMINATIONS

Faculty of Arts

First Year

COURSE	University of Toronto	University College	Victoria College	Trinity College	St. Michael's College	TOTALS	Passed	Conditioned	Failed	Transferred	Aegrotat	Debarred	Active Service
Pass	..	107	84	38	110	339	218	71	50	..	1	48	..
Supplementals	..	34	15	8	11	68	53	15	..	..	..	..	..
Classics	..	4	1	2	4	11	11	..	..	..	..	..	..
English Language and Literature	..	15	18	6	6	45	39	6	..	6	1	..	..
Latin and English	..	..	3	1	..	4	4	..	..	..	1	..	..
Latin (French or Greek Option)	..	..	2	..	2	4	3	1	..	..	..	..	..
Modern Languages	..	16	13	8	9	46	40	5	1	4	1	1	..
Oriental Languages	..	3	..	..	..	3	3	..	..	..	..	..	..
Fine Art	..	5	6	2	1	14	13	1	..	1	1	..	..
Law	..	10	5	2	..	17	17	..	..	..	..	3	..
Social and Philosophical Studies	..	40	30	20	2	92	76	12	4	7	2	5	..
Music	..	2	3	..	1	6	6	..	..	..	..	..	..
Philosophy (English or History Option)	..	..	6	1	1	8	3	4	1	..	..	1	..
Mathematics and Physics	..	19	22	8	1	50	40	5	5	..	..	1	..
Science	..	18	22	3	3	46	37	8	1	3	1	5	..
Household Economics	..	26	20	15	6	67	51	12	4	4	..	3	..
Commerce and Finance	..	25	19	14	7	65	43	13	9	1	1	4	..
Occasional Students	5	4	1	..	1	11	8	..	3	..	..	..	..
Totals	5	328	270	128	165	896	665	153	78	26	9	71	..

Second Year

Course	University of Toronto	University College	Victoria College	Trinity College	St. Michael's College	TOTALS	Passed	Conditioned	Failed	Aegrotat	Debarred	Active Service
Pass	..	116	87	57	80	340	220	77	43	7	11	..
Supplementals	..	20	11	8	12	51	41	10	..	..	..	2
Classics	..	3	1	3	..	7	6	..	1	..	..	..
English Language and Literature	..	16	21	4	1	42	37	..	5	1	..	..
Greek and Hebrew	..	1	..	..	..	1	1	..	..	..	..	..
Hebrew and Ancient History	..	..	1	..	..	1	..	..	1	..	1	..
Latin (French or Greek Option), Div. I	..	..	1	1	1	3	2	..	1	..	..	..
Modern Languages	..	14	10	2	1	27	25	1	1	2	1	..
Fine Art	..	6	2	1	1	10	9	1	..	..	..	..
Law	..	10	7	5	..	22	15	4	3	..	1	..
Modern History	..	9	16	5	1	31	28	..	3	1	2	..
Music	..	2	4	..	1	7	6	1	..	..	..	..
Philosophy	..	1	..	..	..	1	1	..	..	..	..	..
Philosophy (English or History Option)	..	4	2	..	2	8	8	..	..	..	2	..
Political Science and Economics	..	5	10	5	..	20	13	2	5	..	1	..
Psychology	..	6	..	..	..	6	5	..	1	..	..	..
Sociology	..	9	9	1	1	20	17	..	3	..	..	..
Mathematics and Physics	..	11	8	..	2	21	14	..	7	..	1	..
Physics and Chemistry	..	8	2	..	..	10	7	2	1	..	..	..
Physics and Geology	..	..	1	..	..	1	..	1	..	..	..	..
Biological and Medical Sciences	..	3	5	..	..	8	5	1	2	..	..	..
Biology	..	3	4	..	..	7	6	..	1	..	..	..
Biology and Physics	..	1	1	..	..	2	1	..	1	..	..	..
Chemistry	..	6	1	..	3	10	7	..	3	..	..	..
Chemistry, Mineralogy and Geology	..	2	2	..	..	4	1	1	2	..	..	..
Geography	..	1	1	..	..	2	2	..	..	..	..	..
Geology and Mineralogy	..	..	1	..	1	2	2	..	..	..	..	..
Household Economics	..	18	18	5	2	43	32	3	8	1	2	..
Physiology and Biochemistry	..	3	..	..	..	3	2	1	..	..	..	..
Commerce and Finance	..	12	29	19	3	63	32	10	21	1	7	..
Occasional Students	5	1	1	..	..	7	5	..	2	..	..	..
Totals	5	291	256	116	112	780	550	115	115	13	29	2

Third Year

COURSE	University of Toronto	University College	Victoria College	Trinity College	St. Michael's College	TOTALS	Passed	Conditioned	Failed	Aegrotat	Debarred	Active Service
Pass	..	110	80	43	56	289	250	31	8	4	..	23
Supplementals	..	10	1	2	2	15	12	3	..	..	..	..
General	..	19	12	6	1	38	35	..	3	..	..	..
Classics	..	1	1	..	1	3	3	..	..	..	..	..
English Language and Literature	..	10	8	5	3	26	26	..	..	2	..	..
Latin (French or Greek Option), Div. I	..	..	3	..	2	5	5	..	..	1	..	..
Modern Languages	..	10	11	4	2	27	24	1	2	1	..	..
Oriental Languages	..	2	..	..	..	2	2	..	..	..	..	..
Fine Art	..	1	2	2	..	5	5	..	..	1	..	..
Law	..	5	4	1	..	10	10	..	..	..	..	..
Modern History	..	7	10	5	..	22	22	..	..	1	..	..
Music	..	3	3	2	..	8	8	..	..	..	..	..
Philosophy	..	1	2	2	3	8	8	..	..	..	..	..
Philosophy (English or History Option)	..	1	3	2	..	6	6	..	..	..	..	..
Political Science and Economics	..	4	5	1	..	10	10	..	..	..	..	..
Psychology	..	4	..	2	..	6	6	..	..	1	..	..
Sociology	..	5	5	2	..	12	12	..	..	..	..	..
Mathematics and Physics, Divs. I & II	..	2	6	1	..	9	9	..	..	..	..	..
Mathematics and Physics, Divs. III & IV	..	4	3	..	..	7	6	..	1	..	..	..
Physics and Chemistry	..	4	1	..	..	5	4	..	1	..	..	..
Physics and Geology	..	1	..	1	..	2	2	..	..	..	1	..
Biological and Medical Sciences	..	2	2	1	2	7	6	1	..	..	..	..
Biology	..	1	3	2	..	6	4	1	1	..	1	..
Chemistry	..	2	1	3	3	9	8	..	1	..	..	..
Chemistry, Mineralogy and Geology, Div. I	..	3	..	..	..	3	3	..	..	..	..	..
Chemistry, Mineralogy and Geology, Div. II	..	3	1	..	..	4	3	1	..	..	..	..
Food Chemistry	..	1	..	..	..	1	1	..	..	..	..	..
Geology and Mineralogy	..	..	3	..	..	3	3	..	..	..	..	..
Household Economics	..	29	15	6	2	52	43	4	5	..	..	..
Physiology and Biochemistry	..	2	1	..	..	3	3	..	..	..	1	..
Commerce and Finance	..	26	19	6	5	56	52	2	2	..	..	..
Occasional Students	4	1	..	1	1	7	6	..	1	..	..	..
Totals	4	274	205	100	83	666	597	44	25	11	3	23

Fourth Year

Course	University of Toronto	University College	Victoria College	Trinity College	St. Michael's College	TOTALS	Passed	Conditioned	Failed	Aegrotat	Degree without Honours	Active Service
Supplementals	..	1	1	..	..	2	2	..	..	..	..	1
General	..	10	15	6	3	34	33	..	1	2	..	2
Classics	..	..	4	..	1	5	5	..	..	..	..	1
English Language and Literature	..	15	12	1	2	30	30	..	..	2	..	1
Latin (French or Greek Option), Div. I	..	1	2	1	1	5	5	..	..	..	..	..
Latin (French or Greek Option), Div. II	..	..	..	1	1	2	2	..	..	..	..	..
Modern Languages	..	17	7	2	1	27	27	..	..	1	..	..
Oriental Languages	..	3	1	..	..	4	3	..	1	..	..	..
Fine Art	..	5	..	..	1	6	6	..	..	..	..	..
Law	..	21	3	..	..	24	24	..	..	..	1	1
Modern History	..	13	5	3	..	21	21	..	..	..	..	1
Music	..	..	4	..	1	5	5	..	..	..	..	..
Philosophy	..	2	..	1	2	5	5	..	..	..	..	..
Philosophy (English or History Option)	..	2	3	1	4	10	10	..	..	..	..	1
Political Science and Economics	..	8	3	2	..	13	13	..	..	..	..	2
Psychology	..	6	1	2	..	9	9	..	..	..	..	..
Sociology	..	5	5	1	..	11	11	..	..	..	..	..
Mathematics and Physics, Div. I	..	2	2	..	..	4	4	..	..	..	..	1
Mathematics and Physics, Div. II	..	2	1	1	..	4	4	..	..	..	..	1
Mathematics and Physics, Div. III	..	2	2	..	..	4	3	..	1	..	..	..
Mathematics and Physics, Div. III (Special Radio)	..	7	2	..	1	10	10	..	..	..	..	..
Physics and Chemistry	..	1	..	..	1	2	2	..	..	..	..	..
Biological and Medical Sciences	..	3	2	1	..	6	6	..	..	..	..	..
Biology	..	3	1	..	..	4	4	..	..	..	..	..
Biology and Physics	..	1	..	..	..	1	1	..	..	..	..	..
Chemistry	..	6	1	2	2	11	11	..	..	..	..	..
Chemistry, Mineralogy and Geology, Div. I	..	3	2	..	..	5	5	..	..	..	1	..
Chemistry, Mineralogy and Geology, Div. II	..	1	..	..	..	1	1	..	..	..	..	..
Geology and Mineralogy	..	1	1	1	..	3	3	..	..	..	..	1
Household Economics	..	20	13	3	..	36	36	..	..	..	2	..
Physiology and Biochemistry	..	..	4	..	..	4	4	..	..	..	1	1
Commerce and Finance	..	17	14	8	1	40	40	..	..	..	..	2
Occasional Students	1	..	..	1	..	2	2	..	..	..	..	..
Totals	1	178	111	38	22	350	347	..	3	5	5	16

Pass Course for Teachers

	Passed	Conditioned	Total
August Examination	252	48	300
May Examination	336	85	421
Totals	588	133	721

Faculty of Medicine

	Passed	Conditioned	Failed
First Year	92	4	41
Second Year	91	13	15
Third Year	81	12	7
Third Year, Second Part	7	..	..
Fourth Year	93	4	1
Fifth Year	103	13	..
Sixth Year	132	1	2
Candidates for Diploma in Public Health (7 of these to complete Field Work)	25	..	..
Candidate for Diploma in Radiology	1	..	..
Candidates for Diploma in Psychiatry	8	..	..
Occasional Students	4	..	..
Totals	637	47	66

Faculty of Applied Science and Engineering

	Passed with Honours	Passed	Conditioned	Failed
First Year				
Civil Engineering	3	20	13	10
Mining Engineering	2	4	8	4
Mechanical Engineering	9	30	15	15
Architecture	1	4	2	..
Engineering Physics	7	7	11	2
Chemical Engineering	7	36	23	25
Electrical Engineering	5	13	9	18
Metallurgical Engineering	2	6	5	..
Mining Geology	..	1	..	..
Second Year				
Civil Engineering	2	9	15	1
Mining Engineering	6	12	5	..
Mechanical Engineering	7	23	15	7
Architecture	4	4	..	..
Engineering Physics	7	3	4	1
Chemical Engineering	11	20	23	7
Electrical Engineering	11	13	14	4
Metallurgical Engineering	5	11	4	2
Mining Geology	..	..	2	..
Third Year				
Civil Engineering	2	11	4	..
Mining Engineering	2	12	3	..
Mechanical Engineering	12	20	6	..
Architecture	4	4	..	1
Engineering Physics	3	5	1	..
Chemical Engineering	13	14	14	1
Electrical Engineering	4	13	4	3
Metallurgical Engineering	5	11	9	..
Mining Geology	..	4	..	..
Fourth Year				
Civil Engineering	5	16	1	..
Mining Engineering	10	17	..	..
Mechanical Engineering	4	25	5	..
Architecture	2	..	..	..
Engineering Physics	6	3	..	..
Chemical Engineering	14	23	1	..
Electrical Engineering	6	17	8	..
Metallurgical Engineering	6	8	1	..
Mining Geology	4	2	1	..
Fifth Year				
Architecture	2	..	..	..
Totals	193	421	226	101

Faculty of Household Science

	Passed	Conditioned	Failed
First Year	3	1	1
Second Year	..	2	4
Third Year	14	3	10
Fourth Year	4	1	..
Supplementals	3	..	..
Totals	24	7	15

Ontario College of Education

	Passed	Failed
*High School Assistants' Course	302	..
Specialists' Courses	121	..
First Class Public School Course	22	..
Elementary Art Course	32	..
Elementary Commercial Course	31	..
Educational Counselling Course	8	..
Elementary Home Economics Course	6	..
Elementary Vocal Music Course	23	..
Elementary Physical Education Course	71	..
Elementary Shop Work Course	7	..
School Librarianship Course	4	..
Intermediate Art Course	13	..
Intermediate Home Economics Course	9	..
Intermediate Vocal Music Course	10	..
Intermediate Physical Education Course	36	..
Librarians' Course—		
Candidates for Degree of B.L.S.	38	..
Candidates for Diploma	1	..
Bachelor of Pedagogy Course—		
Candidates for Degree of B.Paed.	39	..
Passed in part	130	..
Number who failed in whole or part	..	85
Totals	605	85

*Many of these are included among those who passed or failed in the other courses in this list.

Faculty of Forestry

	Passed	Conditioned	Failed
First Year	12	3	3
Second Year	12	4	..
Third Year	10	5	1
Fourth Year	3	..	..
Totals	37	12	4

Faculty of Music

	Passed	Conditioned	Failed
First Year	10	2	4
Second Year	10	1	1
Third Year	6	13	5
Totals	26	16	10

Faculty of Dentistry

	Passed	Conditioned	Failed
First Year	23	9	..
Second Year	42	11	..
Third Year	47	6	..
Fourth Year	34	5	..
Fifth Year	45	..	..
Occasional Students	3	..	..
Dental Nurses	17	..	..
Totals	211	31	..

Physical and Health Education

	Passed	Conditioned	Failed
First Year	10	3	3

Departments

The numbers examined in the different departments of the University, including those persons granted standing for military service, were as follows:

Arts:		
Fourth Year	350	
Third Year	666	
Second Year	780	
First Year	896	
Pass Course for Teachers	721	
Graduates (Specialist Standing)	33	
	—	3,446
Medicine:		
Sixth Year	135	
Fifth Year	116	
Fourth Year	98	
Third Year	107	
Second Year	119	
First Year	137	
Candidates for Diploma in Public Health	25	
Candidate for Diploma in Radiology	1	
Candidates for Diploma in Psychiatry	8	
Occasional Students	4	
	—	750
Applied Science and Engineering:		
Fifth Year	2	
Fourth Year	185	
Third Year	185	
Second Year	252	
First Year	317	
	—	941
Household Science		46
Education		605
Forestry		53
Music		52
Dentistry		242
Physical and Health Education		16
Social Science		90
School of Nursing		86
Physical Education for Women		23
University Extension:		
Occupational Therapy		98
Physiotherapy		76
Aerial Navigation		37
Law		9
Pharmacy		175
Agriculture		110
Veterinary Science		59
Local Examinations in Music		12,495

IX. ADMISSION TO DEGREES

	Men	Women	Total
LL.D. (Honorary)	6	1	7
Ph.D.	30	5	35
M.A.	58	15	73
M.S.	1	..	1
M.A.Sc.	8	..	8
C.E.	1	..	1
M.E.	1	..	1
D.Paed.	1	..	1
M.Sc.F.	1	..	1
M.S.A.	5	..	5
B.Sc.(Dent.)	1	..	1
B.A.	297	286	583
B.Com.	39	1	40
M.D.	134	8	142
B.A.Sc.	168	..	168
B.Arch.	2	..	2
B.H.Sc.	..	15	15
B.Paed.	32	7	39
B.L.S.	4	34	38
B.Sc.F.	3	..	3
Mus.Bac.	3	3	6
D.D.S.	45	..	45
LL.B.	3	..	3
B.S.A.	105	4	109
B.V.Sc.	55	1	56
Phm.B.	57	7	64
Totals	1,060	387	1,447

X. ADMISSION TO DIPLOMAS AND CERTIFICATES

	Men	Women	Total
Aerial Navigation	12	..	12
Dental Nursing	..	17	17
Librarianship	..	1	1
Nursing	..	83	83
Occupational Therapy	..	34	34
Physical Education	..	5	5
Physiotherapy	..	30	30
Psychiatry	7	1	8
Public Health	16	2	18
Radiology	1	..	1
Social Science	3	25	28
Totals	39	198	237

XI. GEOGRAPHICAL DISTRIBUTION OF STUDENTS

Faculty of Arts

	University of Toronto	University College	Victoria College	Trinity College	St. Michael's College	Totals
Ontario: (1) Province	347	381	316	122	107	1,273
(2) Toronto	447	610	494	233	149	1,933
Nova Scotia	2	2	..	..	..	4
New Brunswick	2	3	4	3	..	12
Prince Edward Island	..	..	1	..	..	1
Quebec	4	1	5	1	2	13
Manitoba	5	2	..	1	..	8
Saskatchewan	13	17	7	3	4	44
Alberta	11	5	5	3	5	29
British Columbia	4	5	..	..	2	11
United States	4	7	3	1	93	108
Elsewhere	1	8	8	10	1	28
Totals	840	1,041	843	377	363	3,464

The University

	Faculty of Arts	Faculty of Medicine	Faculty of Applied Science and Engineering	Faculty of Household Science	Ontario College of Education	Faculty of Forestry	Faculty of Music	School of Graduate Studies	Faculty of Dentistry	Physical and Health Education	Department of Social Science	School of Nursing	Physical Education for Women	Occupational Therapy	Physiotherapy	Aerial Navigation	Registered Twice	TOTALS
Ontario:																		
(1) Province	1,273	266	365	27	425	19	18	116	104	6	28	303	2	39	30	18	3	3,036
(2) Toronto	1,933	409	572	9	211	22	24	207	80	10	32	193	19	46	30	23	16	3,804
Nova Scotia	4	2	1	1	17	..	..	9	1	..	3	4	..	1	..	..	..	43
New Brunswick	12	9	3	..	8	..	2	17	2	..	1	5	..	..	..	..	..	59
Prince Edward Island	1	..	..	..	..	..	..	1	..	..	..	2	..	..	..	..	..	4
Quebec	13	13	6	..	5	1	3	6	..	..	2	3	..	2	1	..	..	55
Manitoba	8	3	6	..	5	..	..	20	18	..	8	5	..	3	2	..	1	77
Saskatchewan	44	40	9	3	8	..	1	16	28	..	7	21	1	1	3	..	1	181
Alberta	29	11	7	2	..	..	1	10	2	..	8	13	..	1	1	..	..	85
British Columbia	11	20	4	5	15	..	..	21	7	..	2	1	..	1	4	..	..	91
United States	108	1	2	..	2	..	5	34	2	..	..	5	..	1	..	..	1	159
Elsewhere	28	27	10	..	2	1	..	33	5	..	2	14	..	3	5	1	..	131
Totals	3,464	801	985	47	698	43	54	490	249	16	93	569	22	98	76	42	22	7,725

The Province of Ontario

	Faculty of Arts	Faculty of Medicine	Faculty of Applied Science and Engineering	Faculty of Household Science	Ontario College of Education	Faculty of Forestry	Faculty of Music	School of Graduate Studies	Faculty of Dentistry	Physical and Health Education	Department of Social Science	School of Nursing	Physical Education for Women	Occupational Therapy	Physiotherapy	Aerial Navigation	Registered Twice	TOTALS
Algoma	16	9	5	..	4	..	..	2	4	..	1	1	..	..	1	..	..	43
Brant	32	8	5	1	7	..	1	3	1	..	1	3	..	1	1	..	..	64
Bruce	24	1	..	..	13	..	..	..	1	..	..	8	..	..	..	..	..	47
Carleton	71	16	12	1	43	2	..	7	7	..	3	14	1	..	1	1	1	178
Cochrane	26	5	11	..	8	..	..	2	2	..	1	..	..	..	2	..	..	57
Dufferin	9	4	4	1	1	..	..	..	2	..	1	4	..	1	..	..	..	27
Dundas	4	..	2	1	2	..	..	..	..	..	..	1	..	..	..	..	..	10
Durham	20	2	4	..	3	..	..	1	1	..	..	5	..	1	1	..	..	38
Elgin	7	1	10	..	11	1	2	..	1	..	..	2	..	..	..	..	..	35
Essex	45	16	13	..	27	1	..	5	8	1	..	13	..	1	2	1	..	133
Frontenac	4	..	..	1	10	..	1	3	1	..	4	9	..	..	..	..	..	33
Glengarry	1	..	1	..	1	..	..	1	..	..	..	..	..	..	..	..	..	4
Grenville	7	2	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	10
Grey	29	5	12	2	13	2	3	..	7	..	1	11	..	1	1	..	..	87
Haldimand	8	3	2	..	1	..	..	2	..	..	..	1	..	..	1	..	..	18
Haliburton	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4
Halton	34	5	6	1	6	2	..	1	3	..	..	6	..	3	..	1	..	68
Hastings	13	5	3	..	6	2	..	1	..	..	1	5	..	..	..	1	..	37
Huron	21	..	6	1	10	..	..	1	..	..	1	5	1	..	..	1	..	47
Kenora	6	7	2	..	3	..	..	1	..	..	..	3	..	..	..	..	..	22
Kent	14	5	7	1	5	..	..	1	2	..	1	1	..	..	..	..	..	37
Lambton	18	5	7	..	13	1	..	..	1	..	..	5	..	..	1	1	..	52
Lanark	16	1	..	1	4	..	..	2	3	..	1	2	..	..	..	..	..	30
Leeds	16	3	1	..	7	..	..	1	1	..	1	6	..	1	1	..	..	38
Lennox and Addington	3	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	6
Lincoln	35	9	20	..	9	..	1	3	4	..	1	3	..	2	1	1	..	89
Manitoulin	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Middlesex	24	1	5	1	27	..	..	8	3	..	..	5	..	1	..	..	..	75

The Province of Ontario—*Continued*

	Faculty of Arts	Faculty of Medicine	Faculty of Applied Science and Engineering	Faculty of Household Science	Ontario College of Education	Faculty of Forestry	Faculty of Music	School of Graduate Studies	Faculty of Dentistry	Physical and Health Education	Department of Social Science	School of Nursing	Physical Education for Women	Occupational Therapy	Physiotherapy	Aerial Navigation	Registered Twice	TOTALS
Muskoka	15	1	5	2	1	..	..	1	1	..	..	3	..	1	..	..	..	30
Nipissing	12	14	10	..	9	..	..	1	8	..	..	7	..	..	1	3	..	65
Norfolk	12	4	1	..	1	..	..	1	1	..	1	..	..	..	1	..	..	22
Northumberland	15	3	7	..	3	..	1	2	3	1	1	4	..	1	..	..	..	41
Ontario	35	10	4	..	6	1	..	3	2	..	1	6	..	1	..	..	..	69
Oxford	18	5	5	..	8	1	..	4	1	..	..	5	..	..	..	..	..	47
Parry Sound	8	2	1	..	3	..	..	1	..	..	..	3	..	..	..	1	..	19
Peel	45	3	11	1	4	..	2	2	1	..	1	7	..	2	1	..	..	80
Perth	29	5	9	1	13	1	..	2	2	..	1	7	..	1	..	1	..	72
Peterborough	39	2	4	..	8	..	1	1	..	..	..	8	..	..	3	..	..	66
Prescott	1	1	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	4
Prince Edward	3	1	..	..	1	..	..	..	..	..	..	2	..	..	..	..	..	7
Rainy River	3	2	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	7
Renfrew	15	2	2	..	8	..	..	1	..	..	..	5	..	..	..	..	..	33
Russell	2	1	..	..	1	..	..	..	..	..	1	2	..	1	..	..	..	8
Simcoe	63	16	17	2	7	..	2	6	7	1	..	20	..	2	..	1	..	144
Stormont	4	..	..	..	2	..	..	..	..	..	1	4	..	..	..	..	..	11
Sudbury	15	..	4	..	1	..	..	..	..	..	..	..	..	..	..	..	..	20
Thunder Bay	26	5	14	1	6	..	1	1	1	..	..	3	..	1	2	..	..	61
Timiskaming	10	5	6	..	5	1	..	4	1	..	..	12	..	2	..	1	..	47
Victoria	9	2	2	1	6	..	..	1	2	..	..	4	..	..	1	..	..	28
Waterloo	42	9	10	1	18	..	..	..	1	1	..	13	..	3	2	..	..	100
Welland	47	12	23	..	13	..	..	3	4	..	..	29	..	1	..	1	2	131
Wellington	40	7	9	2	6	..	2	13	4	..	..	6	..	1	1	..	..	91
Wentworth	68	18	27	2	38	..	1	13	7	..	3	15	..	5	..	..	..	197
York	190	23	56	2	18	4	..	10	5	2	..	25	..	4	5	3	..	347
Toronto	1,933	409	572	9	211	22	24	207	80	10	32	193	19	46	30	23	16	3,804
Totals	3,206	675	937	36	636	41	42	323	184	16	60	496	21	85	60	41	19	6,840

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